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January 12, 2023

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

RE: Red Hill AFFF Assessment Sampling
22L0023

Enclosed are the results of analyses for samples received by our laboratory on 12/3/2022. 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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Data Validatable Report

Analysis Case Narrative

EPA 1633: Manual integrations were performed for this method in accordance with APPL's SOP. Chromatograms after manual integration are enclosed for specific samples and analytes. Abbreviated flags for technical justification are listed on the chromatogram. Some extracted internal standards recovered outside of control limits in some samples, these samples were diluted and recovered in control, unless stated otherwise.

The analyte PFOSA recovered above ½ the PQL in the BBL0133-BLK1. Corrective action: None, samples were non-detect.

The analytes PFOS and 6:2FTS recovered above ½ the PQL in the BBL0100-BLK1.

The extracted internal standard D5-NEtFOSA and D3-NMeFOSA recovered below the lower control limit in BBL0100-BLK1, BBL0100-BS1, BBL0100-BSD1, and BBL0100-MRL1.

The analytes NEtFOSA and NEtFOSAA recovered with high RPD in the BBL0100-BS1/BSD1.

The analytes PFHxS and PFOS recovered with high RPD between sample ADIT6-DU02-SOFT01MI-22DEC and BBL0100-DUP1.

The analytes PFHxS and PFOS recovered with high RPD between sample ADIT6-DU02-SOFT01MI-22DEC and BBL0100-DUP2. The extracted internal standard 13C2-6:2FTS recovered above the upper control limit in BBL0100-DUP2.

The analytes NMeFOSA and NEtFOSAA recovered above the upper control limit in BBL0100-MRL1.

The analyte PFHxA, PFHpS, and 6:2FTS recovered below the lower control limit in the MS and MSD performed on sample ADIT6-DU02-SOFT01MI-22DEC. The analyte NFDHA recovered with high RPD. The extracted internal standard D3-NMeFOSAA recovered above the upper control limit in the MSD.

The extracted internal standards 13C2-6:2FTS and D3-NMeFOSAA recovered above the upper control limit in sample ADIT6-IDW-SON01MI-22DEC, ADIT6-IDW-SOFD01MI-22DEC, and ADIT6-IDW-SOFT01MI-22DEC. The extracted internal standards D5-NEtFOSA and D3-NMeFOSA recovered below the lower control limit.

The extracted internal standard 13C2-6:2FTS recovered above the upper control limit in sample ADIT6-DU02-SON01MI-22DEC and ADIT6-DU02-SOFD01MI-22DEC.

The extracted internal standard D5-NEtFOSA and D3-NMeFOSA recovered below the lower control limit in sample ADIT6-DU04A-SON01MI-22DEC. The extracted internal standard D5-NEtFOSAA recovered above the upper control limit.

The extracted internal standard 13C4-PFBA recovered below the lower control limit in sample ADIT6-DU04B-SON01MI-22DEC.

The extracted internal standard 13C4-PFBA recovered below the lower control limit in the BBL0133-BLK1, BBL0133-BS1, BBL0133-BSD1, and BBL0133-MRL1. The analyte PFMPA recovered below the lower control limit in the BBL0133-BS1, BBL0133-BSD1 and BBL0133-MRL1. The analyte PFBA recovered above the upper control limit in the BBL0133-MRL1. Corrective action: None, samples were unaffected. Justification: Ammonium acetate was excluded from the sample pretreatment steps due to lacking chemical availability and delayed shipments. This impacts the ability to read the pH of very clean solutions, including deionized water. This may have lead to the poor recoveries of some PFAS observed in this extraction set.

The analytes PFTeDA and 9CL-PF3ONS recovered above the upper control limits in the SB03753-LCV1. The analytes

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NEtFOSAA and NFDHA recovered below the lower control limits.

The analyte NFDHA recovered below the lower control limit in the SB03753-CCV2.

EPA 1633 SPLP:

The extracted internal standard D5-NEtFOSA recovered below the lower control limit in the BBL0372-BS1.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
22L0023-01	ADIT6-IDW-SON01MI-22DEC	Solid	12/02/2022 19:10	12/03/2022
22L0023-02	ADIT6-IDW-SOFD01MI-22DEC	Solid	12/02/2022 19:20	12/03/2022
22L0023-03	ADIT6-IDW-SOFT01MI-22DEC	Solid	12/02/2022 19:30	12/03/2022
22L0023-04	ADIT6-DU02-SON01MI-22DEC	Solid	12/02/2022 13:00	12/03/2022
22L0023-05	ADIT6-DU02-SOFD01MI-22DEC	Solid	12/02/2022 13:00	12/03/2022
22L0023-06	ADIT6-DU02-SOFT01MI-22DEC	Solid	12/02/2022 13:00	12/03/2022
22L0023-07	ADIT6-DU04A-SON01MI-22DEC	Solid	12/02/2022 10:55	12/03/2022
22L0023-08	ADIT6-DU01-SON01MI-22DEC	Solid	12/02/2022 13:00	12/03/2022
22L0023-09	ADIT6-DU04B-SON01MI-22DEC	Solid	12/02/2022 11:05	12/03/2022

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Containers Received

Lab ID	Container Type	Count	Preservation Check
22L0023-01	Client Provided	6	
22L0023-02	Client Provided	6	
22L0023-03	Client Provided	6	
22L0023-04	Client Provided	6	
22L0023-05	Client Provided	6	
22L0023-06	Client Provided	6	
22L0023-07	Client Provided	6	
22L0023-08	Client Provided	7	
22L0023-09	Client Provided	6	
22L0023-10	500mL P	2	

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Sample Results

**Sample: ADIT6-IDW-SON01MI-22DEC
22L0023-01 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	170	7.4	3.7	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	160	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	420	1.9	1.9	0.26	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	53	1.9	0.93	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	30	1.9	0.93	0.70	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	3.1	1.9	0.93	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	5.2 IR2	1.9	0.93	0.47	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	3.0 IR2	1.9	0.93	0.74	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.93 U IR2,	1.9	0.93	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.9	1.4	0.93	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.93 U	1.9	0.93	0.93	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	3.9	1.9	0.93	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.93 U	1.9	0.93	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	1.3 J	1.9	0.93	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.93 U	1.9	0.93	0.24	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	33	1.9	0.93	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.93 U	1.9	0.93	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.93 U	1.9	0.93	0.70	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.93 U	1.9	0.93	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	110	7.4	3.7	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	9700	74	37	14	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.4	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.93 U	1.9	0.93	0.47	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.4	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.4	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.93 U	1.9	0.93	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.93 U	1.9	0.93	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.6 U	7.4	5.6	4.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.6 U	7.4	5.6	4.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.9 U	3.7	1.9	0.79	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.9 U	3.7	1.9	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.9 U	3.7	1.9	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.9 U	3.7	1.9	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.9 U	3.7	1.9	0.42	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.9 U	3.7	1.9	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.9 U	3.7	1.9	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.9 U	3.7	1.9	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	4.2 J	7.4	3.7	2.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	150	7.4	3.7	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.4	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	93.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	97.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	95.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	86.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	86.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

Sample: ADIT6-IDW-SON01MI-22DEC (Continued)
22L0023-01 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	92.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	84.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	41.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	79.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	62.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	117%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	90.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	98.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	141%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	121%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	138%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	25.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	81.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	50.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	54.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	129%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	94.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOE	96.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOE	89.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	92.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

**Sample: ADIT6-IDW-SOFD01MI-22DEC
22L0023-02 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	170	7.6	3.8	1.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	180	3.8	3.8	0.31	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	410	1.9	1.9	0.26	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	63	1.9	0.95	0.20	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	29	1.9	0.95	0.71	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	3.7	1.9	0.95	0.39	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	9.0	1.9	0.95	0.48	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	4.6 IR2	1.9	0.95	0.76	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.81 J	1.9	0.95	0.52	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U IR2,	1.9	1.4	0.95	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.95 U	1.9	0.95	0.95	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	4.5	1.9	0.95	0.18	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.95 U	1.9	0.95	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	1.7 J	1.9	0.95	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.95 U	1.9	0.95	0.24	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	55	1.9	0.95	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.95 U	1.9	0.95	0.57	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	1.1 J	1.9	0.95	0.71	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.95 U	1.9	0.95	0.57	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	100	7.6	3.8	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	9400	76	38	15	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
8:2FTS	3.8 U	7.6	3.8	0.39	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.95 U	1.9	0.95	0.48	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.8 U	7.6	3.8	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.8 U	7.6	3.8	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.95 U	1.9	0.95	0.52	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.95 U	1.9	0.95	0.52	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.7 U	7.6	5.7	4.8	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.7 U	7.6	5.7	4.8	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.9 U	3.8	1.9	0.81	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.9 U	3.8	1.9	0.57	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.9 U	3.8	1.9	0.52	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.9 U	3.8	1.9	0.26	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.9 U	3.8	1.9	0.43	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.9 U	3.8	1.9	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.9 U	3.8	1.9	1.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.9 U	3.8	1.9	1.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	6.3 J	7.6	3.8	2.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	160	7.6	3.8	2.1	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.8 U	7.6	3.8	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	94.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	94.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	94.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	85.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	91.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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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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Sample Results (Continued)

Sample: ADIT6-IDW-SOFD01MI-22DEC (Continued)
22L0023-02 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	97.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	85.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	43.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	97.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	50.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	121%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	85.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	103%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	169% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	96.6%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	120%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	170% S2		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	32.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	107%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	64.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	67.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	151% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	94.4%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	104%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOE	109%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOE	108%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	97.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

**Sample: ADIT6-IDW-SOFT01MI-22DEC
22L0023-03 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	150	7.4	3.7	0.97	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	170	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	380	1.8	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	58	1.8	0.92	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	28	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	3.4	1.8	0.92	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	7.0	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	4.0 IR2	1.8	0.92	0.74	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.78 J IR1,	1.8	0.92	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.8	1.4	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.92 U	1.8	0.92	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	4.2	1.8	0.92	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.92 U	1.8	0.92	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	1.7 J	1.8	0.92	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.92 U	1.8	0.92	0.24	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	44	1.8	0.92	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.92 U IR1,	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	93	7.4	3.7	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	8800	74	37	14	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.4	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.92 U	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.4	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.4	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.92 U	1.8	0.92	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.92 U	1.8	0.92	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.5 U	7.4	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.5 U	7.4	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.8 U	3.7	1.8	0.78	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.8 U	3.7	1.8	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.8 U	3.7	1.8	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.8 U	3.7	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.8 U	3.7	1.8	0.42	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.8 U	3.7	1.8	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.8 U	3.7	1.8	0.97	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.8 U	3.7	1.8	0.97	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	3.3 J	7.4	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	160	7.4	3.7	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.4	3.7	2.5	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	98.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	96.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	93.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	86.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	92.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

Sample: ADIT6-IDW-SOFT01MI-22DEC (Continued)
22L0023-03 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	88.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	83.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	40.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	70.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	58.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	116%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	91.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	102%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	162% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	97.0%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	123%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	165% S2		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	35.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	91.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	52.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	50.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	111%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	108%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOE	97.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOE	90.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	91.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

**Sample: ADIT6-DU02-SON01MI-22DEC
22L0023-04 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	240	7.3	3.7	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	92	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	740	1.8	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	22	1.8	0.92	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	53	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	0.67 J	1.8	0.92	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	6.5	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	0.92 U	1.8	0.92	0.73	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.92 U	1.8	0.92	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.8	1.4	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.92 U	1.8	0.92	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	0.23 J	1.8	0.92	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.92 U	1.8	0.92	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	1.1 J	1.8	0.92	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.92 U	1.8	0.92	0.23	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	8.9	1.8	0.92	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.92 U	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	37	7.3	3.7	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	6500	73	37	14	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.3	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.92 U	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.3	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.3	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.92 U	1.8	0.92	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.92 U	1.8	0.92	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.5 U	7.3	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.5 U	7.3	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.8 U	3.7	1.8	0.78	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.8 U	3.7	1.8	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.8 U	3.7	1.8	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.8 U	3.7	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.8 U	3.7	1.8	0.42	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.8 U	3.7	1.8	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.8 U	3.7	1.8	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.8 U	3.7	1.8	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	3.7 U	7.3	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	47	7.3	3.7	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.3	3.7	2.5	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	92.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	92.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	81.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	75.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	86.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

Sample: ADIT6-DU02-SON01MI-22DEC (Continued)
22L0023-04 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	92.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	86.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	22.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	79.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	54.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	128%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	88.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	102%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	174% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	103%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	103%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	160% S2		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	8.84% S1		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	48.8%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	56.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	71.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	64.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	196% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	101%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSAA	124%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOSE	135%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOSE	118%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	85.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Project Manager: Watson Tanji

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Sample Results (Continued)

**Sample: ADIT6-DU02-SOFD01MI-22DEC
22L0023-05 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	320	7.4	3.7	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	120	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	930	19	19	2.6	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
PFHPA	30	1.9	0.93	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	67	1.9	0.93	0.70	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	0.93 U	1.9	0.93	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	8.5	1.9	0.93	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	0.93 U	1.9	0.93	0.74	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.93 U	1.9	0.93	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.9	1.4	0.93	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.93 U	1.9	0.93	0.93	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	0.27 J	1.9	0.93	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.93 U	1.9	0.93	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	1.4 J	1.9	0.93	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.93 U	1.9	0.93	0.24	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	7.7	1.9	0.93	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.93 U	1.9	0.93	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.93 U	1.9	0.93	0.70	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.93 U	1.9	0.93	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	56	7.4	3.7	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	9500	74	37	14	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.4	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.93 U	1.9	0.93	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.4	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.4	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.93 U	1.9	0.93	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.93 U	1.9	0.93	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.6 U	7.4	5.6	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.6 U	7.4	5.6	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.9 U	3.7	1.9	0.79	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.9 U	3.7	1.9	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.9 U	3.7	1.9	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.9 U	3.7	1.9	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.9 U	3.7	1.9	0.42	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.9 U	3.7	1.9	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.9 U	3.7	1.9	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.9 U	3.7	1.9	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	3.7 U	7.4	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	96	7.4	3.7	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.4	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	95.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	108%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	89.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHPA	92.2%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	82.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

Sample: ADIT6-DU02-SOFD01MI-22DEC (Continued)
22L0023-05 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C8-PFOA	90.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C9-PFNA	82.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	73.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	26.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	72.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	44.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	128%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	89.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	95.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	180% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	121%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	87.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	194% S2		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	10.9% S1		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	38.6%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	50.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	61.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	63.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	193% S2		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	83.6%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	116%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOSE	122%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOSE	118%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	93.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

**Sample: ADIT6-DU02-SOFT01MI-22DEC
22L0023-06 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	130	7.3	3.6	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	100	3.6	3.6	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	510	1.8	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	17	1.8	0.91	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	23	1.8	0.91	0.68	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	0.91 U	1.8	0.91	0.37	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	3.9	1.8	0.91	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	0.91 U	1.8	0.91	0.73	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.91 U	1.8	0.91	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.8	1.4	0.91	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.91 U	1.8	0.91	0.91	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	0.22 J	1.8	0.91	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.91 U	1.8	0.91	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	0.94 J	1.8	0.91	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.91 U	1.8	0.91	0.23	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	7.5	1.8	0.91	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.91 U	1.8	0.91	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.91 U	1.8	0.91	0.68	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.91 U	1.8	0.91	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	20	7.3	3.6	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	6000	73	36	14	ng/L	12/21/22	10	EPA 1633 SPLP	BBL0372
8:2FTS	3.6 U	7.3	3.6	0.37	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.91 U	1.8	0.91	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.6 U	7.3	3.6	2.1	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.6 U	7.3	3.6	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.91 U	1.8	0.91	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.91 U	1.8	0.91	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.5 U	7.3	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.5 U	7.3	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.8 U	3.6	1.8	0.77	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.8 U	3.6	1.8	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.8 U	3.6	1.8	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.8 U	3.6	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.8 U	3.6	1.8	0.41	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.8 U	3.6	1.8	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.8 U	3.6	1.8	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.8 U	3.6	1.8	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	3.3 J	7.3	3.6	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	29	7.3	3.6	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.6 U	7.3	3.6	2.5	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	91.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	90.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	82.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	82.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	81.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

**Sample: ADIT6-DU02-SOFT01MI-22DEC (Continued)
22L0023-06 (Solid)**

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	80.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	67.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	38.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	75.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	43.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	106%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	82.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	93.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	137%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	122%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	135%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	17.7% S1		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	57.2%		20-150			12/21/22	10	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	67.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	37.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	41.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOA	128%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOA	110%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOE	87.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOE	86.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	85.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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Sample Results (Continued)

**Sample: ADIT6-DU04A-SON01MI-22DEC
22L0023-07 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	73	7.3	3.7	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	220	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	110	1.8	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	59	1.8	0.92	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	2.3	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	1.2 J	1.8	0.92	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	0.76 J IR2,	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	0.92 U IR2,	1.8	0.92	0.73	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.92 U	1.8	0.92	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.8	1.4	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.92 U	1.8	0.92	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	0.29 J	1.8	0.92	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.92 U	1.8	0.92	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	2.4	1.8	0.92	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.92 U	1.8	0.92	0.23	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	42	1.8	0.92	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.92 U IR1,	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	3.7 U	7.3	3.7	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	180	7.3	3.7	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.3	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	2.5	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.3	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.3	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.92 U	1.8	0.92	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.92 U	1.8	0.92	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.5 U	7.3	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.5 U	7.3	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.8 U	3.7	1.8	0.78	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.8 U	3.7	1.8	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.8 U	3.7	1.8	0.50	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.8 U	3.7	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.8 U	3.7	1.8	0.42	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.8 U	3.7	1.8	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.8 U	3.7	1.8	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.8 U	3.7	1.8	0.96	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	3.6 J	7.3	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	2.6 J	7.3	3.7	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.3	3.7	2.5	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	89.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	89.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	81.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	86.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	89.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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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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Sample Results (Continued)

Sample: ADIT6-DU04A-SON01MI-22DEC (Continued)
22L0023-07 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	86.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	74.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	66.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	59.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	39.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	90.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	83.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	81.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	119%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	97.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	92.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOSA	74.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSA	39.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSA	40.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	89.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSAA	88.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOSE	39.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOSE	42.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	89.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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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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Sample Results (Continued)

**Sample: ADIT6-DU01-SON01MI-22DEC
22L0023-08 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	53	7.4	3.7	0.97	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	140	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	140	1.8	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	34	1.8	0.92	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	6.1	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	1.7 J	1.8	0.92	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	1.1 J IR2,	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	0.92 U IR2,	1.8	0.92	0.74	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.92 U	1.8	0.92	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.8	1.4	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.92 U	1.8	0.92	0.92	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	0.42 J	1.8	0.92	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.92 U	1.8	0.92	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	2.6	1.8	0.92	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.92 U	1.8	0.92	0.24	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	51	1.8	0.92	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.92 U IR1,	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.92 U	1.8	0.92	0.69	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.92 U	1.8	0.92	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	17	7.4	3.7	1.3	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	2700	7.4	3.7	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.4	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	0.48 J	1.8	0.92	0.46	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.4	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.4	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.92 U	1.8	0.92	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.92 U	1.8	0.92	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.5 U	7.4	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.5 U	7.4	5.5	4.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.8 U	3.7	1.8	0.78	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.8 U	3.7	1.8	0.55	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.8 U	3.7	1.8	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.8 U	3.7	1.8	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.8 U	3.7	1.8	0.42	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.8 U	3.7	1.8	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.8 U	3.7	1.8	0.97	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.8 U	3.7	1.8	0.97	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	6.4 J	7.4	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	55	7.4	3.7	2.0	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.4	3.7	2.5	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	91.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	94.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	97.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	91.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	92.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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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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Sample Results (Continued)

Sample: ADIT6-DU01-SON01MI-22DEC (Continued)
22L0023-08 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	87.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	93.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	73.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	89.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	72.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	104%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	94.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	72.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	108%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	98.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	69.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOSA	91.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSA	51.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSA	52.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	85.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSAA	87.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOSE	64.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOSE	65.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	95.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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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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Sample Results (Continued)

**Sample: ADIT6-DU04B-SON01MI-22DEC
22L0023-09 (Solid)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	66	7.5	3.7	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEA	210	3.7	3.7	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXA	93	1.9	1.9	0.26	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPA	52	1.9	0.94	0.19	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOA	1.9	1.9	0.94	0.70	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNA	0.87 J	1.9	0.94	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDA	0.54 J	1.9	0.94	0.47	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFUnA	0.94 U	1.9	0.94	0.75	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOA	0.94 U	1.9	0.94	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTRDA	1.4 U	1.9	1.4	0.94	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFTEDA	0.94 U	1.9	0.94	0.94	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFBS	0.43 J	1.9	0.94	0.17	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFPEs	0.94 U	1.9	0.94	0.29	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHXS	2.0	1.9	0.94	0.15	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFHPS	0.94 U	1.9	0.94	0.24	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOS	25	1.9	0.94	0.30	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFNS	0.94 U	1.9	0.94	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDS	0.94 U	1.9	0.94	0.70	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFDOS	0.94 U	1.9	0.94	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
4:2FTS	3.7 U	7.5	3.7	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
6:2FTS	130	7.5	3.7	1.5	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
8:2FTS	3.7 U	7.5	3.7	0.38	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFOSA	1.6 J	1.9	0.94	0.47	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSA	3.7 U	7.5	3.7	2.2	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSA	3.7 U	7.5	3.7	1.9	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSAA	0.94 U	1.9	0.94	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSAA	0.94 U	1.9	0.94	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NMeFOSE	5.6 U	7.5	5.6	4.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NEtFOSE	5.6 U	7.5	5.6	4.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
HFPO-DA	1.9 U	3.7	1.9	0.80	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
ADONA	1.9 U	3.7	1.9	0.56	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFEESA	1.9 U	3.7	1.9	0.51	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMPA	1.9 U	3.7	1.9	0.25	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
PFMBA	1.9 U	3.7	1.9	0.43	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
NFDHA	1.9 U	3.7	1.9	1.4	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
9CL-PF3ONS	1.9 U	3.7	1.9	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
11CL-PF3OUDS	1.9 U	3.7	1.9	0.98	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
3:3FTCA	3.7 U	7.5	3.7	2.7	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
5:3FTCA	2.5 J	7.5	3.7	2.1	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
7:3FTCA	3.7 U	7.5	3.7	2.6	ng/L	12/21/22	1	EPA 1633 SPLP	BBL0372
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Surrogate: 13C4-PFBA	88.5%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFPEA	86.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C5-PFHXA	86.0%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C4-PFHPA	88.7%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOA	82.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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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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Sample Results (Continued)

Sample: ADIT6-DU04B-SON01MI-22DEC (Continued)
22L0023-09 (Solid)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	76.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C6-PFDA	83.4%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C7-PFUnA	66.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFDOA	62.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-PFTEDA	40.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFBS	80.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-PFHXS	85.3%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOS	81.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-4:2FTS	109%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-6:2FTS	113%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C2-8:2FTS	92.1%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C8-PFOSA	60.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSA	31.6%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSA	32.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D3-NMEFOSAA	78.2%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D5-NETFOSAA	90.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D7-NMEFOSE	34.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: D9-NETFOSE	31.9%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372
Surrogate: 13C3-HFPO-DA	85.8%		20-150			12/21/22	1	EPA 1633 SPLP	BBL0372

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: 01/12/2023 08:51

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: BBL0372 - PFAS Leachates

Blank (BBL0372-BLK1)

Prepared: 12/19/22 12:22 Analyzed: 12/21/22 19:57

	ng/L			
PFBA	4.0 U	8.0	4.0	1.0
PFPEA	4.0 U	4.0	4.0	0.32
PFHXA	2.0 U	2.0	2.0	0.28
PFHPA	1.0 U	2.0	1.0	0.20
PFOA	1.0 U IR2,	2.0	1.0	0.75
PFNA	1.0 U	2.0	1.0	0.41
PFDA	1.0 U	2.0	1.0	0.50
PFUnA	1.0 U	2.0	1.0	0.80
PFDOA	1.0 U	2.0	1.0	0.55
PFTRDA	1.5 U	2.0	1.5	1.0
PFTEDA	1.0 U	2.0	1.0	1.0
PFBS	1.0 U	2.0	1.0	0.18
PFPEs	1.0 U	2.0	1.0	0.32
PFHXS	1.0 U	2.0	1.0	0.16
PFHPS	1.0 U	2.0	1.0	0.26
PFOS	0.604 J	2.0	1.0	0.32
PFNS	1.0 U	2.0	1.0	0.60
PFDS	1.0 U	2.0	1.0	0.75
PFDOS	1.0 U	2.0	1.0	0.60
4:2FTS	4.0 U	8.0	4.0	1.4
6:2FTS	4.0 U	8.0	4.0	1.6
8:2FTS	4.0 U	8.0	4.0	0.41
PFOSA	1.0 U	2.0	1.0	0.50
NMeFOSA	4.0 U	8.0	4.0	2.4
NEtFOSA	4.0 U	8.0	4.0	2.0
NMeFOSAA	1.0 U	2.0	1.0	0.55
NEtFOSAA	1.0 U	2.0	1.0	0.55
NMeFOSE	6.0 U	8.0	6.0	5.0
NEtFOSE	6.0 U	8.0	6.0	5.0
HFPO-DA	2.0 U	4.0	2.0	0.85
ADONA	2.0 U	4.0	2.0	0.60
PFEESA	2.0 U	4.0	2.0	0.55
PFMPA	2.0 U	4.0	2.0	0.27
PFMBA	2.0 U	4.0	2.0	0.46
NFDHA	2.0 U	4.0	2.0	1.5
9CL-PF3ONS	2.0 U	4.0	2.0	1.0
11CL-PF3OUDS	2.0 U	4.0	2.0	1.0
3:3FTCA	4.0 U	8.0	4.0	2.8
5:3FTCA	4.0 U	8.0	4.0	2.2
7:3FTCA	4.0 U	8.0	4.0	2.8

Surrogates

13C4-PFBA	151	160	94.4	20-150
13C5-PFPEA	72.6	80.0	90.8	20-150
13C5-PFHXA	34.9	40.0	87.4	20-150
13C4-PFHPA	34.5	40.0	86.2	20-150
13C8-PFOA	34.3	40.0	85.7	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: 01/12/2023 08:51
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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: BBL0372 - PFAS Leachates (Continued)

Blank (BBL0372-BLK1)

Prepared: 12/19/22 12:22 Analyzed: 12/21/22 19:57

	ng/L							
Surrogates								
13C9-PFNA	15.2			20.0		75.8		20-150
13C6-PFDA	17.3			20.0		86.4		20-150
13C7-PFUnA	13.4			20.0		66.8		20-150
13C2-PFDOA	15.4			20.0		76.9		20-150
13C2-PFTEDA	16.5			20.0		82.4		20-150
13C3-PFBS	36.2			40.0		90.5		20-150
13C3-PFHXS	32.8			40.0		82.1		20-150
13C8-PFOS	30.3			40.0		75.7		20-150
13C2-4:2FTS	65.7			80.0		82.2		20-150
13C2-6:2FTS	58.8			80.0		73.6		20-150
13C2-8:2FTS	63.8			80.0		79.8		20-150
13C8-PFOA	31.1			40.0		77.8		20-150
D5-NETFOA	8.64			40.0		21.6		20-150
D3-NMEFOA	9.98			40.0		24.9		20-150
D3-NMEFOA	62.9			80.0		78.6		20-150
D5-NETFOA	68.1			80.0		85.2		20-150
D7-NMEFOA	189			400		47.2		20-150
D9-NETFOA	165			400		41.2		20-150
13C3-HFOA-DA	134			160		83.8		20-150

LCS (BBL0372-BS1)

Prepared: 12/19/22 12:22 Analyzed: 12/21/22 20:09

	ng/L							
PFBA	79.8			80.0		99.7		40-150
PFPEA	39.7			40.0		99.3		40-150
PFHXA	20.9			20.0		105		40-150
PFHPA	19.3			20.0		96.7		40-150
PFOA	19.6			20.0		98.0		40-150
PFNA	21.7			20.0		109		40-150
PFDA	19.3			20.0		96.5		40-150
PFUnA	19.4			20.0		96.8		40-150
PFDOA	21.4			20.0		107		40-150
PFTRDA	20.5			20.0		102		40-150
PFTEDA	21.9			20.0		109		40-150
PFBS	18.7			17.7		106		40-150
PFPEA	20.5			18.8		109		40-150
PFHXS	19.1			18.3		104		40-150
PFHPS	21.1			19.1		111		40-150
PFOS	19.8			18.6		106		40-150
PFNS	19.3			19.2		100		40-150
PFDS	19.0			19.3		98.3		40-150
PFDOS	20.3			19.4		104		40-150
4:2FTS	76.8			75.0		102		40-150
6:2FTS	81.0			76.0		107		40-150
8:2FTS	77.3			76.8		101		40-150
PFOA	20.5			20.0		103		40-150

The contents of this report apply to the sample(s) analyzed in accordance with the chain of custody document. No duplication of this report is allowed, except in its entirety.

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: 01/12/2023 08:51

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: BBL0372 - PFAS Leachates (Continued)

LCS (BBL0372-BS1)

Prepared: 12/19/22 12:22 Analyzed: 12/21/22 20:09

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
NMeFOSA	87.1				80.0		109	40-150		
NETFOSA	91.7				80.0		115	40-150		
NMeFOSAA	23.5				20.0		117	40-150		
NETFOSAA	23.3				20.0		116	40-150		
NMeFOSE	71.2				80.0		89.0	40-150		
NETFOSE	58.1				80.0		72.6	40-150		
HFPO-DA	37.4				40.0		93.6	40-150		
ADONA	35.7				37.8		94.4	40-150		
PFEESA	36.6				35.6		103	40-150		
PFMPA	40.7				40.0		102	40-150		
PFMBA	36.6				40.0		91.6	40-150		
NFDHA	44.2				40.0		110	40-150		
9CL-PF3ONS	29.5				37.4		79.0	40-150		
11CL-PF3OUDS	29.1				37.8		76.9	40-150		
3:3FTCA	77.0				80.0		96.2	40-150		
5:3FTCA	80.7				80.0		101	40-150		
7:3FTCA	82.3				80.0		103	40-150		

Surrogates

13C4-PFBA	145				160		90.9	20-150		
13C5-PFPEA	75.6				80.0		94.5	20-150		
13C5-PFHXA	34.4				40.0		86.1	20-150		
13C4-PFHXA	35.6				40.0		89.1	20-150		
13C8-PFOA	34.9				40.0		87.2	20-150		
13C9-PFNA	18.0				20.0		89.9	20-150		
13C6-PFDA	16.2				20.0		80.8	20-150		
13C7-PFUnA	15.7				20.0		78.6	20-150		
13C2-PFDOA	13.7				20.0		68.7	20-150		
13C2-PFTEDA	13.6				20.0		68.2	20-150		
13C3-PFBS	35.8				40.0		89.4	20-150		
13C3-PFHXS	32.6				40.0		81.4	20-150		
13C8-PFOS	27.9				40.0		69.7	20-150		
13C2-4:2FTS	69.0				80.0		86.3	20-150		
13C2-6:2FTS	64.1				80.0		80.1	20-150		
13C2-8:2FTS	59.1				80.0		73.9	20-150		
13C8-PFOA	30.5				40.0		76.3	20-150		
D5-NETFOA	7.32 S1				40.0		18.3	20-150		
D3-NMEFOA	9.02				40.0		22.5	20-150		
D3-NMEFOSAA	54.5				80.0		68.1	20-150		
D5-NETFOSAA	52.9				80.0		66.1	20-150		
D7-NMEFOSE	165				400		41.3	20-150		
D9-NETFOSE	148				400		37.0	20-150		
13C3-HFPO-DA	147				160		91.9	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: 01/12/2023 08:51

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: BBL0372 - PFAS Leachates (Continued)

MRL Check (BBL0372-MRL1)

Prepared: 12/19/22 12:22 Analyzed: 12/21/22 20:22

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
PFBA	6.93 J				8.00		86.7	0-200		
PFPEA	4.18				4.00		104	0-200		
PFHXA	2.19				2.00		110	0-200		
PFHPA	2.47				2.00		123	0-200		
PFOA	2.42				2.00		121	0-200		
PFNA	2.24				2.00		112	0-200		
PFDA	2.37				2.00		119	0-200		
PFUnA	1.90 J IR2,				2.00		94.8	0-200		
PFDOA	1.26 J IR2,				2.00		63.0	0-200		
PFTRDA	1.57 J IR2,				2.00		78.6	0-200		
PFTEDA	1.95 J				2.00		97.3	0-200		
PFBS	1.81 J				1.77		102	0-200		
PFPEs	1.90 J				1.88		101	0-200		
PFHXS	1.90 J				1.83		104	0-200		
PFHPS	1.67 J				1.91		87.4	0-200		
PFOS	2.00				1.86		108	0-200		
PFNS	1.40 J				1.92		72.7	0-200		
PFDS	1.52 J				1.93		78.9	0-200		
PFDOS	1.36 J				1.94		70.1	0-200		
4:2FTS	6.65 J				7.50		88.7	0-200		
6:2FTS	8.82				7.60		116	0-200		
8:2FTS	6.56 J				7.68		85.4	0-200		
PFOSA	1.76 J				2.00		88.0	0-200		
NMeFOSA	5.78 J				8.00		72.3	0-200		
NEtFOSA	6.02 J				8.00		75.3	0-200		
NMeFOSAA	2.08				2.00		104	0-200		
NEtFOSAA	1.94 J				2.00		96.8	0-200		
NMeFOSE	7.27 J				8.00		90.9	0-200		
NEtFOSE	7.22 J				8.00		90.3	0-200		
HFPO-DA	3.59 J				4.00		89.8	0-200		
ADONA	3.68 J				3.78		97.5	0-200		
PFEESA	3.22 J				3.56		90.4	0-200		
PFMPA	3.78 J				4.00		94.4	0-200		
PFMBA	3.64 J				4.00		90.9	0-200		
NFDHA	3.61 J				4.00		90.1	0-200		
9CL-PF3ONS	2.84 J				3.74		76.0	0-200		
11CL-PF3OUDS	2.80 J				3.78		74.0	0-200		
3:3FTCA	9.01				8.00		113	0-200		
5:3FTCA	7.50 J				8.00		93.8	0-200		
7:3FTCA	7.90 J				8.00		98.8	0-200		

Surrogates

13C4-PFBA	147				160		91.8	20-150		
13C5-PFPEA	72.8				80.0		91.0	20-150		
13C5-PFHXA	35.4				40.0		88.5	20-150		
13C4-PFHPA	36.6				40.0		91.5	20-150		
13C8-PFOA	34.4				40.0		86.0	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: 01/12/2023 08:51
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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: BBL0372 - PFAS Leachates (Continued)

MRL Check (BBL0372-MRL1)

Prepared: 12/19/22 12:22 Analyzed: 12/21/22 20:22

	ng/L									
Surrogates										
13C9-PFNA	15.2				20.0		76.0	20-150		
13C6-PFDA	14.7				20.0		73.3	20-150		
13C7-PFUnA	14.4				20.0		71.8	20-150		
13C2-PFDOA	16.3				20.0		81.5	20-150		
13C2-PFTEDA	17.0				20.0		85.1	20-150		
13C3-PFBS	31.4				40.0		78.5	20-150		
13C3-PFHXS	31.7				40.0		79.2	20-150		
13C8-PFOS	31.8				40.0		79.5	20-150		
13C2-4:2FTS	69.6				80.0		87.0	20-150		
13C2-6:2FTS	64.8				80.0		81.0	20-150		
13C2-8:2FTS	58.4				80.0		72.9	20-150		
13C8-PFOA	29.4				40.0		73.5	20-150		
D5-NETFOA	9.78				40.0		24.5	20-150		
D3-NMEFOA	11.3				40.0		28.2	20-150		
D3-NMEFOSAA	61.0				80.0		76.3	20-150		
D5-NETFOSAA	59.0				80.0		73.8	20-150		
D7-NMEFOSE	199				400		49.7	20-150		
D9-NETFOSE	189				400		47.2	20-150		
13C3-HFPO-DA	144				160		89.9	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: 01/12/2023 08:51

Notes and Definitions

Item	Definition
CV1	Calibration verification recovered below the lower control limit
CV2	Calibration verification recovered above the upper control limit
IR1	Ion ratio below the lower control limit
IR2	Ion ratio above the upper control limit
J	Estimated value
MI5	Manual integration, whole peak was not integrated
S1	Surrogate recovered below the lower control limit
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
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****22L0023**

Printed: 01/12/2023 8:52 am

Project: Red Hill AFFF Assessment Sampling**Project Number:** Red Hill AFFF Assessment Sampling**Project Manager:** Gregory Salata**PO Number:****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: 12/03/2022 02:49 PM

Date Due: 12/19/2022 (10.00 day TAT)

Logged In By: Megan Salata

Received By: Megan Salata

Analysis**Comments****22L0023-01 ADIT6-IDW-SON01MI-22DEC [Solid] Sampled 12/2/2022 7:10:00PM***Sample Comments: HOT!*

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE

22L0023-02 ADIT6-IDW-SOFD01MI-22DEC [Solid] Sampled 12/2/2022 7:20:00PM*Sample Comments: HOT!*

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE

22L0023-03 ADIT6-IDW-SOFT01MI-22DEC [Solid] Sampled 12/2/2022 7:30:00PM*Sample Comments: HOT!*

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE

22L0023-04 ADIT6-DU02-SON01MI-22DEC [Solid] Sampled 12/2/2022 1:00:00PM*Sample Comments: HOT!*

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE

22L0023-05 ADIT6-DU02-SOFD01MI-22DEC [Solid] Sampled 12/2/2022 1:00:00PM*Sample Comments: HOT!*

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE

22L0023-06 ADIT6-DU02-SOFT01MI-22DEC [Solid] Sampled 12/2/2022 1:00:00PM*Sample Comments: HOT! Run Lab Duplicate and Lab Replicate*

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE

22L0023-07 ADIT6-DU04A-SON01MI-22DEC [Solid] Sampled 12/2/2022 10:55:00AM

1312 SPLP Bottle Prep PFAS	NONE
1633 SPLP	NONE



WORK ORDER

22L0023

Printed: 01/12/2023 8:52 am

(Continued)

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Gregory Salata
PO Number:

Analysis	Comments
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22L0023-08 ADIT6-DU01-SON01MI-22DEC [Solid] Sampled 12/2/2022 1:00:00PM

1312 SPLP Bottle Prep PFAS NONE
 1633 SPLP NONE

22L0023-09 ADIT6-DU04B-SON01MI-22DEC [Solid] Sampled 12/2/2022 11:05:00AM

1312 SPLP Bottle Prep PFAS NONE
 1633 SPLP NONE

22L0023 Sample Receipt Log

Default Cooler

Samples Received at: **0.6°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

New Cooler

Samples Received at: **2.2°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

New Cooler [1]

Samples Received at: **2.0°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

ELECTRONIC CHAIN OF CUSTODY RECORD

Phone: (559) 275-2175
Fax: (559) 275-4422

C.O.C. 2212W1AP-05

22L0023

Report to: **AECOM** Invoice to: **AECOM**

Company Name: **1001 Bishop St Suite 1600** Phone: _____
Address: **Honolulu, HI 96813** Fax: _____
Attn: **Watson Tanji (watson.wanji@aecom.com)** Attn: **Sheree Smith (USAPImaging@aecom.com)**

Project Name/Number	Purchase Order Number	Sample Identification	Sampler (Print)			Date Collected	Time Collected	Time Zone	No. of Containers	Matrix			Analysis Requested/Method Number	Date Shipped:
			Location	Sampler (Signature)	Sampler (Print)					Aq	Sed.	Soil		
ADIT6-IDW-SON01MI-22DEC		RHSF		Mitch Brier		12/02/22	1910	HST	6		✓			
ADIT6-IDW-SOFD01MI-22DEC		↓		Mitch Brier		↓	1920	HST	6		✓			Store ALL samples until notified by client to dispose <i>Presumably Samples are highly contaminated.</i>
ADIT6-IDW-SOFT01MI-22DEC		↓				↓	1930	HST	6		✓			

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

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

Relinquished by: *Alex Edmund* Received by: *Alex Edmund*
 Date: *12/22* Time: *2030* Date: *12/22* Time: *1449*

Relinquished by: *Sheree Smith* Received by: *Sheree Smith*
 Date: *12/22* Time: *1449* Date: *12/22* Time: *1449*

Relinquished by: *Sheree Smith* Received by: *Sheree Smith*
 Date: *12/22* Time: *1449* Date: *12/22* Time: *1449*

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



APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

ELECTRONIC CHAIN OF CUSTODY RECORD
Phone: (559) 275-2175
Fax: (559) 275-4422
C.O.C. 2212W1AP-02

Report to:		PLEASE PRINT		Invoice to:		PLEASE PRINT							
Company Name: AECOM		Phone: 808-954-4512		Company Name: AECOM		Phone: _____							
Address: 1001 Bishop St Suite 1600 Honolulu, HI 96813		Fax: _____		Address: _____		Fax: _____							
Attn: Watson Tanji (watson.wanji@aecom.com)				Attn: Sheree Smith (USAPImaging@aecom.com)									
Project Name/Number	Sampler (Print)	Sampler (Signature)	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix			Analysis Requested/Method Number	Date Shipped:	
								Aq	Sed.	Soil			Carrier:
60697810	Sheree Villavargas	[Signature]		12/2/22	1300		6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PFAS EPA Draft 1633		
ADIT6-DU02-SON01MI-22DEC				12/2/22	1300		6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
ADIT6-DU02-SOFT01MI-22DEC				12/2/22	1300		6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Store ALL samples until notified by client to dispose # Samples are highly contaminated.	
Turnaround Requested: Check one <input type="checkbox"/> Standard 2-3 wk <input checked="" type="checkbox"/> One week <input type="checkbox"/> 24/48 Hrs. <input type="checkbox"/> Other													
Sample Disposal: <input type="checkbox"/> Return to client <input type="checkbox"/> Disposal by Lab (30-day retention)													
Title Temperature:		Date		Time		Date		Time		Date		Time	
Relinquished by sampler:		12/2/22		1649		Received by:		Eli Martin		Relinquished by:		Eli Martin	
Relinquished by:		12/3/22		1443		Received by:				Relinquished by:		12/3/22 1449	
Note: Return to client with report Yellow: Laboratory Copy Pink: Sampler Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.													



ELECTRONIC CHAIN OF CUSTODY RECORD

Phone: (559) 275-2175
 Fax: (559) 275-4422

C.O.C. 2212W1AP-04

APPL, Inc.
 908 N Temperance Ave
 Clovis, CA 93611

PLEASE PRINT

PLEASE PRINT

Invoice to:

Report to: **AECOM** Phone: **808-954-4512**
 Company Name: **AECOM** Address: _____
 1001 Bishop St Suite 1600
 Honolulu, HI 96813
 Attn: **Watson Tanji (watson.wanji@aecom.com)**
 Project Name/Number: **60697810** Date Collected: **12/2/02** Time Collected: **1055**
 Purchase Order Number: _____ Location: _____
 Sampler (Print): **Jorge Vivas**
 Sampler (Signature): *[Signature]*

Company Name: **AECOM**

Phone: _____

Address: _____

Company Name: _____

Phone: _____

Address: _____

Attn: **Sheree Smith (USAPImaging@aecom.com)**

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix			Analysis Requested/Method Number	Date Shipped:
						Aq	Sed.	Soil		
ADIT6-DU04A-SON01MI-22DEC		12/2/02	1055		6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Matrix		Analysis Requested/Method Number	Date Shipped:
Aq	Sed.		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Store ALL samples until notified by client to dispose

Bottle Temperature:

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

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

Relinquished by sampler:	Date	Time	Received by:	Date	Time
<i>[Signature]</i>	12/2/02	1609	El Mark	12/2/02	1700
<i>[Signature]</i>	12/3/02	1449	El Mark	12/3/02	1449

Relinquished by:

Received by: **El Mark**

Relinquished by: **El Mark**

Received by: *[Signature]*

Received by: **El Mark**

Received at lab by: *[Signature]*

White: Return to client with report

Yellow: Laboratory Copy

Pink: Sampler

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



ELECTRONIC CHAIN OF CUSTODY RECORD

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422
C.O.C. 2212W1AP-01

Report to: **AECOM** Invoice to: **AECOM** PLEASE PRINT

Company Name: **1001 Bishop St Suite 1600** Phone: **808-954-4512**

Address: **Honolulu, HI 96813**

Attn: **Watson Tanji (watson.wanji@aecom.com)**

Project Name/Number: **60697810** Sampler (Print): *Jorge Vinasobos*

Purchase Order Number: *[Signature]*

Sample Identification: **ADIT6-DU01-SON01MI-22DEC** Location: *[Blank]*

Sample Identification	Location	Date Collected	Time Collected	Time Zone	Matrix			No. of Containers	Analysis Requested/Method Number				Date Shipped:			
					Aq	Sed	Soil		Carrier	Waybill No.:	Comments:					
ADIT6-DU01-SON01MI-22DEC		12/2/20	1700		<input checked="" type="checkbox"/>			7	PFAS EPA Draft 1633	<input checked="" type="checkbox"/>						

Store ALL samples until notified by client to dispose

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

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

Relinquished by:	Date	Time	Received by:	Date	Time
<i>El Martin</i>	12/2/20	1645	<i>El Martin</i>	12/4/20	1747
<i>[Signature]</i>	12/3/20	1449	<i>[Signature]</i>	12/22/20	1449

Note: Return to client with report

Yellow: Laboratory Copy
Pink: Sampler

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



ELECTRONIC CHAIN OF CUSTODY RECORD

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

C.O.C. 2212W1AP-05

PLEASE PRINT

PLEASE PRINT

Report to: **AECOM** Invoice to: **AECOM**

Company Name: **1001 Bishop St Suite 1600** Phone: **808-954-4512**

Address: **Honolulu, HI 96813**

Attn: **Watson Tanji (watson.wanji@aecom.com)**

Company Name: _____ Phone: _____

Address: _____ Fax: _____

Attn: **Sheree Smith (USAPImaging@aecom.com)**

Project Name/Number 60697810	Sampler (Print) JORGE VILARDO	Sampler (Signature) <i>[Signature]</i>	Location	Date Collected 12/1/12	Time Collected 1105	Time Zone	No. of Containers 6	Matrix			Analysis Requested/Method Number	Date Shipped:
								Aq	Sed.	Soil		
ADIT6-DU04B-SON01MI-22DEC								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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

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

Relinquished by sampler: *[Signature]* Date: **12/2/12** Time: **1609** Received by: **Eli Martin** Date: **12/2/12** Time: **1709**

Relinquished by: *[Signature]* Date: **12/3/12** Time: **1449** Received by: *[Signature]* Date: **12/3/12** Time: **1449**

Yellow: Laboratory Copy
Pink: Sampler

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



APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

ELECTRONIC CHAIN OF CUSTODY RECORD

Phone: (559) 275-2175
Fax: (559) 275-4422
C.O.C. 2212W1AP-06

Report to: AECOM	PLEASE PRINT Company Name: AECOM	Invoice to: Company Name: AECOM
Phone: 808-954-4512	Address: 1001 Bishop St Suite 1600 Honolulu, HI 96813	Address: _____ Phone: _____
Attn: Watson Tanji (watson.wanji@aecom.com)	Attn: Sheree Smith (USAPImaging@aecom.com)	Attn: _____ Phone: _____ Fax: _____

Project Name/Number 60697810	Sampler (Print) <i>Justin Descant</i>	Sampler (Signature) <i>Justin Descant</i>	Location RHSF	Date Collected 12-2-22	Time Collected 17:25	Time Zone HST	No. of Containers		Matrix	Analysis Requested/Method Number	Date Shipped:				
							Aq	Sed.				Soil	Carrier:	Waybill No.:	Comments:
AF-RHMM225401-WGN01B-2212W1							2	1	X						

Store ALL samples until notified by client to dispose

Turnaround Requested: Check one <input type="checkbox"/> Standard 2-3 wk <input checked="" type="checkbox"/> One week <input type="checkbox"/> 24/48 Hrs. <input type="checkbox"/> Other	Sample Disposal: <input type="checkbox"/> Return to client <input type="checkbox"/> Disposal by Lab (30-day retention)
Relinquished by sampler: <i>Eli Martin</i>	Relinquished by: <i>Eli Martin</i>
Date: 12-2-22 Time: 1853	Date: 12/2/22 Time: 1915
Date: 12/2/22 Time: 1449	Date: 12/30/22 Time: 1449
Received by: <i>Eli Martin</i>	Received by:
Received by:	Received at Lab by:

Yellow: Laboratory Copy Pink: Sampler

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

Types of Samples		Types of Preservatives		Requested Information:
		Keep all Samples on Ice		
	Liquids	H ₂ SO ₄	Sulfuric Acid	
		HCl	Hydrochloric Acid	
DW	Drinking Water	NaOH	Sodium Hydroxide	
GW	Ground Water	Na ₂ SO ₃	Sodium Thiosulfate	
MW	Monitoring Water	HNO ₃	Nitric Acid	
SW	Surface Water		Zinc Acetate	
TB	Travel Blank			
WW	Waste Water	Types of Containers		
		A	Amber Glass	
	Solids	C	Clear Glass	
S	Soil	B	Brass Tube	
SLD	Solid	M	Metal Tube	
SL	Sludge	P	Plastic	
Oil	Oil	G	Bag	
M	Miscellaneous	AV	Amber Glass VOA	
W	Wipes	GV	Glass VOA	
SED	Sediment	O	Other _____	

Initials EM Date 3/10/07
 AECOM (808) 1503-125
CUSTODY SEAL

OTHER

PREPARATION BATCH SUMMARY

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM Honolulu	Project:	Red Hill AFFF Assessment Sampling
Batch:	BBL0370	Batch Matrix:	Solid
		Preparation:	EPA 1312 Bottle Prep

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT g	FINAL VOL. mL
ADIT6-IDW-SON01MI-22DEC	22L0023-01	12/19/22 11:59	100.18	2005
ADIT6-IDW-SOFD01MI-22DEC	22L0023-02	12/19/22 11:59	100.27	2003
ADIT6-IDW-SOFT01MI-22DEC	22L0023-03	12/19/22 11:59	100.18	2008
ADIT6-DU02-SON01MI-22DEC	22L0023-04	12/19/22 11:59	100.05	2011
ADIT6-DU02-SOFD01MI-22DEC	22L0023-05	12/19/22 11:59	100.31	2003
ADIT6-DU02-SOFT01MI-22DEC	22L0023-06	12/19/22 11:59	100.19	2006
ADIT6-DU04A-SON01MI-22DEC	22L0023-07	12/19/22 11:59	100.31	2016
ADIT6-DU01-SON01MI-22DEC	22L0023-08	12/19/22 11:59	100.98	2017
ADIT6-DU04B-SON01MI-22DEC	22L0023-09	12/19/22 11:59	100.36	2013
Blank	BBL0370-BLK1	12/19/22 11:59	100.00	2000

PFAS

SAMPLE DATA

QUALITY CONTROL

CALIBRATION SUMMARY

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(212.9 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.38071 x (std. dev. = 0.01822) (weighting: None)	%RSE=4.8
PFPeA	(262.9 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.48065 x (std. dev. = 0.01779) (weighting: None)	%RSE=3.7
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.50396 x (std. dev. = 0.02693) (weighting: None)	%RSE=5.3
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.50649 x (std. dev. = 0.01605) (weighting: None)	%RSE=3.2
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.51542 x (std. dev. = 0.03171) (weighting: None)	%RSE=6.2
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.96408 x (std. dev. = 0.03914) (weighting: None)	%RSE=4.1
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 1.01450 x (std. dev. = 0.08058) (weighting: None)	%RSE=7.9
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.88030 x (std. dev. = 0.03872) (weighting: None)	%RSE=4.4
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.92011 x (std. dev. = 0.07853) (weighting: None)	%RSE=8.5
PFTTrDA	(663.0 / 619.0)	13C2_PFTTrDA_EIS	1.0000	1.0000	y = 0.80822 x (std. dev. = 0.09177) (weighting: None)	%RSE=11.4
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.98573 x (std. dev. = 0.09828) (weighting: None)	%RSE=10.0
PFBS	(298.9 / 80.0)	13C3_PFBs_EIS	1.0000	0.8847	y = 0.27007 x (std. dev. = 0.01553) (weighting: None)	%RSE=5.7
PFPeS	(349.0 / 80.0)	13C3_PFPeS_EIS	1.0000	0.9384	y = 0.88715 x (std. dev. = 0.04559) (weighting: None)	%RSE=5.1
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.76368 x (std. dev. = 0.04383) (weighting: None)	%RSE=5.7
PFHpS	(449.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9514	y = 0.43113 x (std. dev. = 0.03587) (weighting: None)	%RSE=8.3
PFOS	(499.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9275	y = 0.52064 x (std. dev. = 0.03219) (weighting: None)	%RSE=6.2
PFNS	(549.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9599	y = 0.63269 x (std. dev. = 0.06479) (weighting: None)	%RSE=10.2
PFDS	(599.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9631	y = 0.79503 x (std. dev. = 0.07164) (weighting: None)	%RSE=9.0
PFDoS	(698.9 / 80.0)	13C8_PFOs_EIS	1.0000	0.9696	y = 0.47468 x (std. dev. = 0.05089) (weighting: None)	%RSE=10.7
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 3.26467 x (std. dev. = 0.22338) (weighting: None)	%RSE=6.8
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.50542 x (std. dev. = 0.12080) (weighting: None)	%RSE=8.0
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.50490 x (std. dev. = 0.23569) (weighting: None)	%RSE=15.7
PFOSA	(498.0 / 78.0)	13C8_PFOsA_EIS	1.0000	1.0000	y = 0.55528 x (std. dev. = 0.02645) (weighting: None)	%RSE=4.8
NMeFOSA	(511.9 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.83821 x (std. dev. = 0.28178) (weighting: None)	%RSE=15.3
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 2.07124 x (std. dev. = 0.11528) (weighting: None)	%RSE=5.6
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.21802 x (std. dev. = 0.02557) (weighting: None)	%RSE=11.7
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22942 x (std. dev. = 0.02519) (weighting: None)	%RSE=11.0
NMeFOSE	(616.1 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.28119 x (std. dev. = 0.01599) (weighting: None)	%RSE=5.7
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.13695 x (std. dev. = 0.01131) (weighting: None)	%RSE=8.3
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.16604 x (std. dev. = 0.00987) (weighting: None)	%RSE=5.9
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.63291 x (std. dev. = 0.03582) (weighting: None)	%RSE=5.7
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 1.72419 x (std. dev. = 0.22146) (weighting: None)	%RSE=12.8
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.19895 x (std. dev. = 0.08727) (weighting: None)	%RSE=7.3
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.04722 x (std. dev. = 0.00204) (weighting: None)	%RSE=4.3
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.42827 x (std. dev. = 0.02999) (weighting: None)	%RSE=7.0
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.55141 x (std. dev. = 0.03929) (weighting: None)	%RSE=7.1
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.91981 x (std. dev. = 0.06473) (weighting: None)	%RSE=7.0
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.13235 x (std. dev. = 0.00850) (weighting: None)	%RSE=6.4
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.41250 x (std. dev. = 0.01997) (weighting: None)	%RSE=4.8
NFDHA	(201.0 / 85.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 1.46781e-5 x^2 + 0.02408 x + 0.00150 (r = 0.99646) (weighting: 1 / x^2)	%RSE=9.4
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 96126.4553 x	%RSD=9.0
13C2_PFHxA_IIS	(315.1 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 123484.6254 x	%RSD=6.1
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 118549.9955 x	%RSD=6.3
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 95239.8716 x	%RSD=5.5
13C2_PFDA_IIS	(515.1 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 82383.6105 x	%RSD=7.9
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 214631.7525 x	%RSD=3.5
13C4_PFOs_IIS	(502.8 / 79.9)	13C4_PFOs_IIS	1.0000	1.0000	y = 186123.6678 x	%RSD=8.8

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBa_EIS	(217.0 / 172.0)	13C3_PFBa_IIS	8.0000	1.0000	y = 7.5003 x	%RSD=2.5
13C5_PFPaA_EIS	(267.9 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 2.9178 x	%RSD=4.7
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.0400 x	%RSD=4.8
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 1.8414 x	%RSD=6.1
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 2.0343 x	%RSD=7.8
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 0.9869 x	%RSD=8.2
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.4525 x	%RSD=9.0
13C7_PFUaA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.9498 x	%RSD=11.1
13C2_PFDaA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 2.3663 x	%RSD=10.1
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.7371 x	%RSD=10.6
13C3_PFBs_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.9393 x	%RSD=4.1
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.6731 x	%RSD=2.7
13C8_PFOs_EIS	(507.0 / 80.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 3.0489 x	%RSD=5.3
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.3315 x	%RSD=3.6
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4448 x	%RSD=9.0
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.3861 x	%RSD=15.6
13C8_PFOsA_EIS	(506.0 / 78.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 4.6545 x	%RSD=8.0
D3_NMeFOsA_EIS	(515.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 1.3773 x	%RSD=12.2
D5_NEtFOsA_EIS	(531.1 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 1.2488 x	%RSD=6.8
D3_MeFOsAA_EIS	(573.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.3566 x	%RSD=8.5
D5_EtFOsAA_EIS	(589.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.1660 x	%RSD=7.5
D7_NMeFOsE_EIS	(623.2 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 2.3525 x	%RSD=5.5
D9_NEtFOsE_EIS	(639.2 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 1.1987 x	%RSD=6.9
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 5.3742 x	%RSD=3.8

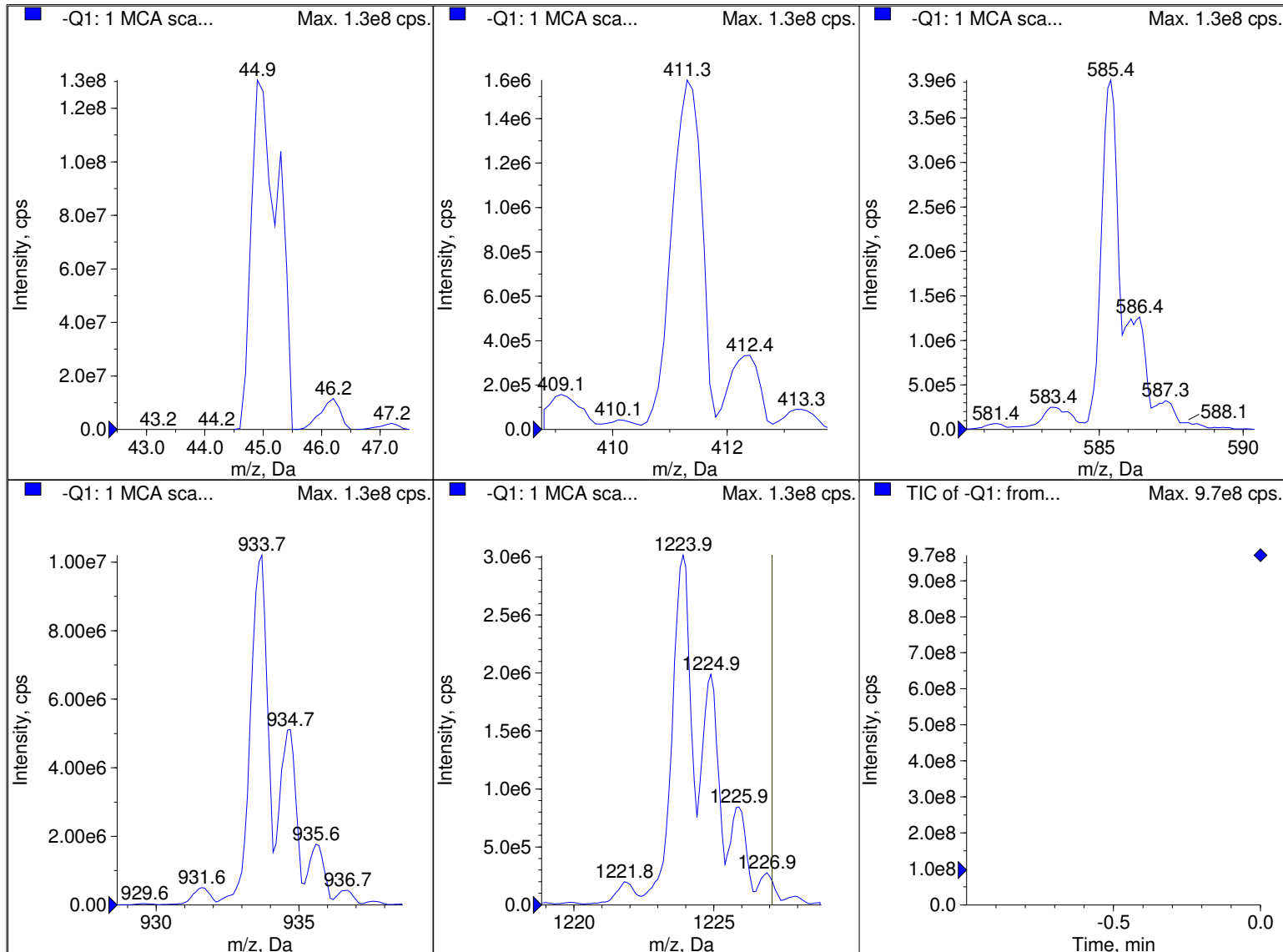
x= Concentration Analyte

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

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

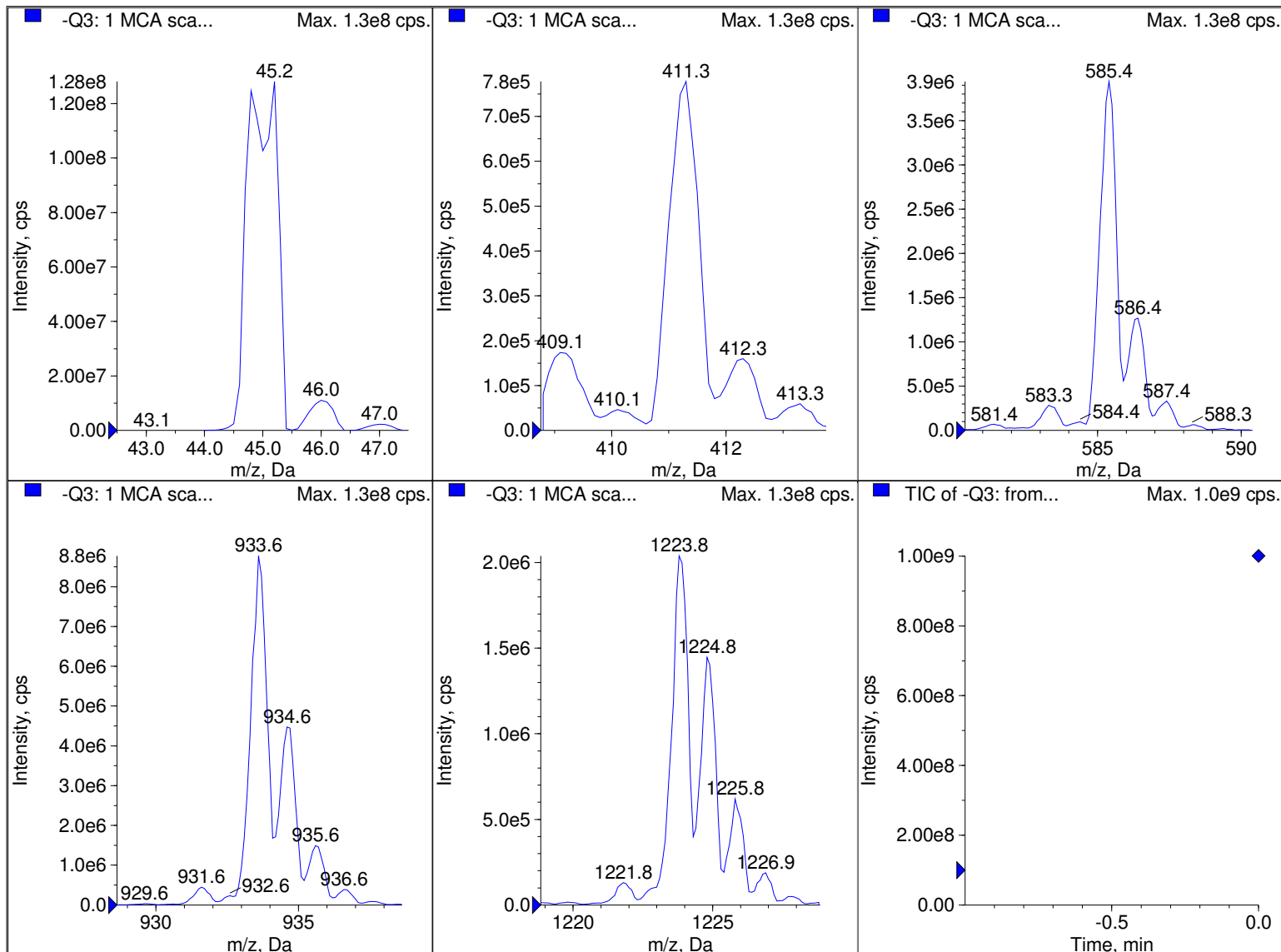
$$\text{Multiplier} = \frac{\text{Concentration of Analyte}}{\text{Concentration of PFOA}} \text{ in curve standard mix}$$

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



Peak List for "-Q1: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142838.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0305	1.3061e8	0.6158	-0.0325
2	411.2590	411.3148	1.5745e6	0.6085	-0.0558
3	585.3850	585.3651	3.9270e6	0.6307	0.0199
4	933.6360	933.6197	1.0205e7	0.6552	0.0163
5	1223.8450	1223.8627	3.0170e6	0.6967	-0.0177
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



Peak List for "-Q3: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142403.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9799	1.2814e8	0.6414	0.0181
2	411.2590	411.2677	7.7810e5	0.6076	-8.6898e-3
3	585.3850	585.3784	3.9438e6	0.6511	6.5868e-3
4	933.6360	933.6279	8.7759e6	0.6302	8.0526e-3
5	1223.8450	1223.8609	2.0397e6	0.6225	-0.0159
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a

Initial Calibration:

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2250016**Laboratory ID:** SB03724-SCV1**Sequence:** SB03724**Standard ID:** 22L0185

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	8.44	5.5	30.00
PFPEA	4.00	3.99	-0.2	30.00
PFHXA	2.00	2.07	3.4	30.00
PFHPA	2.00	1.92	-4.1	30.00
PFOA	2.00	2.13	6.7	30.00
PFNA	2.00	2.08	3.8	30.00
PFDA	2.00	1.90	-4.9	30.00
PFUnA	2.00	1.90	-5.0	30.00
PFDOA	2.00	2.18	8.9	30.00
PFTRDA	2.00	2.14	7.1	30.00
PFTEDA	2.00	2.07	3.6	30.00
PFBS	1.77	1.74	-1.4	30.00
PFPEs	1.88	1.81	-3.8	30.00
PFHXS	1.83	1.74	-4.8	30.00
PFHPS	1.91	1.90	-0.4	30.00
PFOS	1.86	1.77	-5.0	30.00
PFNS	1.92	1.89	-1.5	30.00
PFDS	1.93	1.84	-4.8	30.00
PFDOS	1.94	1.72	-11.3	30.00
4:2FTS	7.50	7.13	-5.0	30.00
6:2FTS	7.60	7.77	2.2	30.00
8:2FTS	7.68	7.55	-1.7	30.00
PFOSA	2.00	1.98	-1.2	30.00
NMeFOSA	8.00	7.65	-4.4	30.00
NEtFOSA	8.00	7.40	-7.5	30.00
NMeFOSAA	2.00	2.27	13.3	30.00
NEtFOSAA	2.00	2.34	16.8	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2250016**Laboratory ID:** SB03724-SCV1**Sequence:** SB03724**Standard ID:** 22L0185

NMeFOSE	8.00	6.90	-13.8	30.00
NEtFOSE	8.00	7.51	-6.1	30.00
HFPO-DA	4.00	4.03	0.8	30.00
ADONA	3.78	3.86	2.1	30.00
PFEESA	3.56	3.44	-3.3	30.00
PFMPA	4.00	3.80	-5.1	30.00
PFMBA	4.00	3.52	-12.1	30.00
NFDHA	4.00	4.55	13.7	30.00
9CL-PF3ONS	3.74	4.01	7.3	30.00
11CL-PF3OUDS	3.78	3.84	1.7	30.00
3:3FTCA	8.00	7.01	-12.4	30.00
5:3FTCA	8.00	7.83	-2.1	30.00
7:3FTCA	8.00	7.50	-6.3	30.00
13C4-PFBA	8.00	7.57	-5.3	30.00
13C5-PFPEA	4.00	4.25	6.1	30.00
13C5-PFHXA	2.00	1.96	-1.8	30.00
13C4-PFHPA	2.00	2.07	3.4	30.00
13C8-PFOA	2.00	1.96	-2.0	30.00
13C9-PFNA	1.00	0.875	-12.5	30.00
13C6-PFDA	1.00	0.938	-6.2	30.00
13C7-PFUnA	1.00	1.02	1.8	30.00
13C2-PFDOA	1.00	0.891	-10.9	30.00
13C2-PFTEDA	1.00	0.905	-9.5	30.00
13C3-PFBS	2.00	1.91	-4.3	30.00
13C3-PFHXS	2.00	1.91	-4.5	30.00
13C8-PFOS	2.00	1.99	-0.6	30.00
13C2-4:2FTS	4.00	4.01	0.2	30.00
13C2-6:2FTS	4.00	3.63	-9.3	30.00
13C2-8:2FTS	4.00	3.92	-1.9	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2250016**Laboratory ID:** SB03724-SCV1**Sequence:** SB03724**Standard ID:** 22L0185

13C8-PFOSA	2.00	1.96	-2.1	30.00
D5-NETFOSA	2.00	1.96	-1.9	30.00
D3-NMEFOSA	2.00	1.85	-7.7	30.00
D3-NMEFOSAA	4.00	3.79	-5.2	30.00
D5-NETFOSAA	4.00	3.51	-12.2	30.00
D7-NMEFOSE	20.0	20.0	-0.2	30.00
D9-NETFOSAE	20.0	19.5	-2.4	30.00
13C3-HFPO-DA	8.00	7.86	-1.7	30.00

* Values outside of QC limits

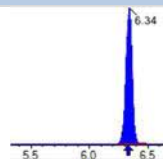
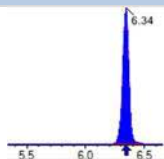
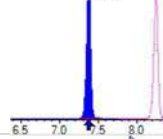
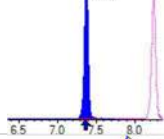
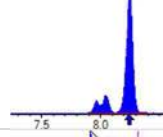
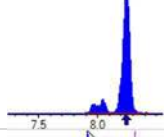
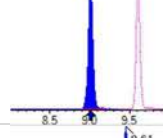
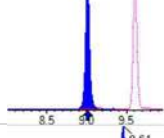
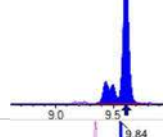
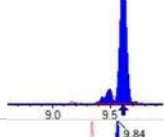
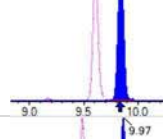
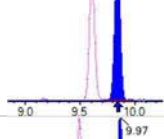
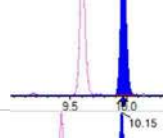
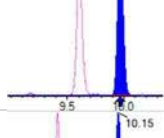
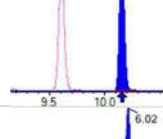
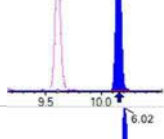
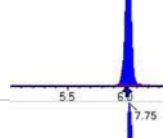
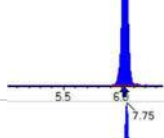
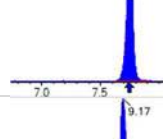
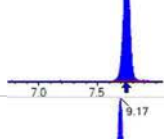
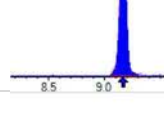
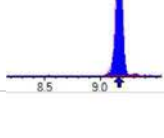


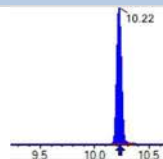
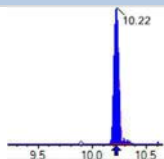
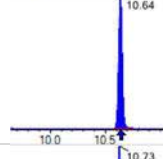
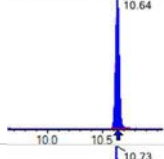
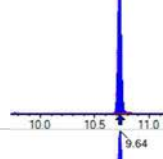
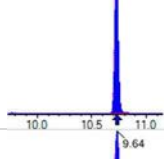
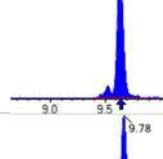
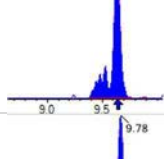
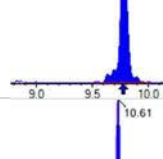
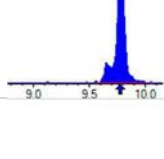
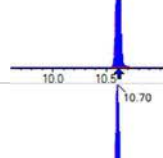
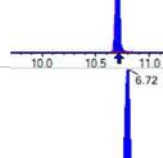
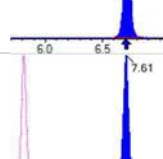
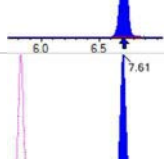
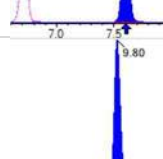
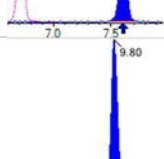
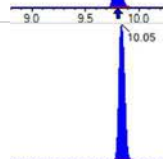
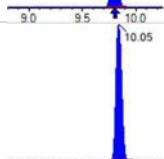

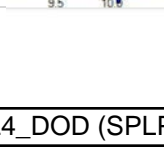
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 Instrument: Saphira
 Type: Sciex Q3 5500

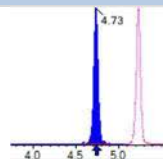
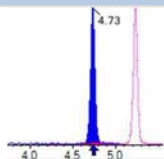
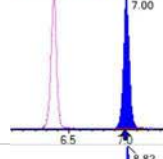
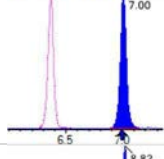
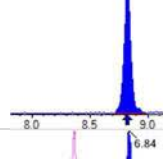
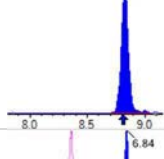
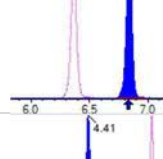
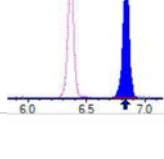
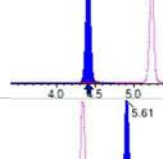
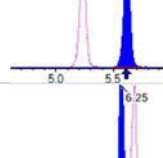
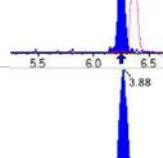
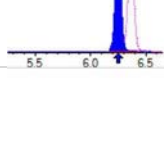
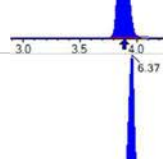
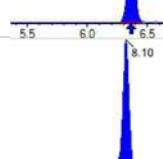
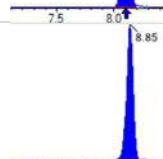
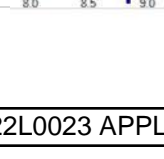
Sample I.D.: SB03724-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-07.dam

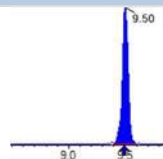
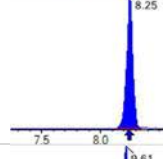
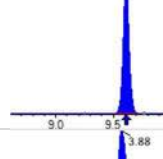
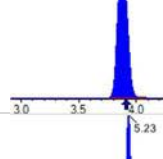
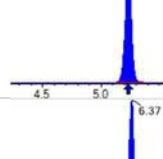
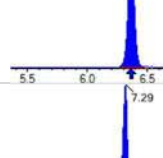
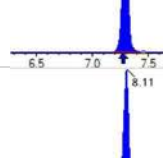
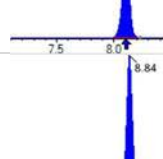
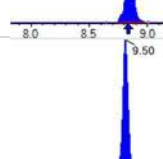
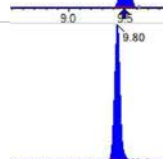

Quant Method: 1633 - 2022-12-07
 Path: S2022-12-07A22.wiff-0
 Acquired: 2022/12/07 - 16:06

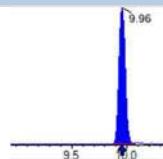
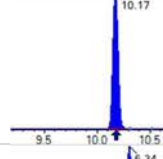
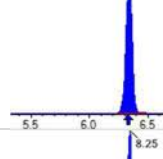
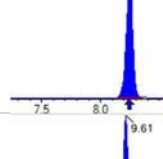
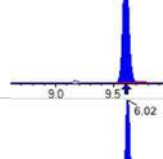
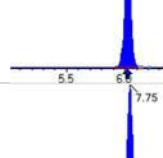
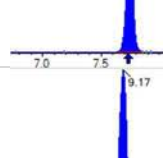
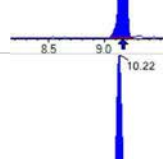
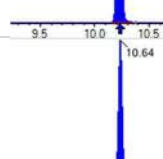
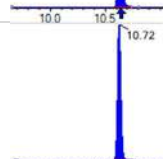
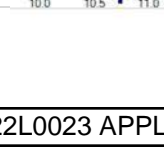
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 594184	(3.88, 1.00) (0.00, N/A, 0.0)	131.5	N/A 0.0 0.0	8.4366 [8.0000]	105.5%			
PFPeA	(262.9 / 219.0) 372834 (262.9 / 69.0) 4351	(5.23, 1.00) (0.00, N/A, -0.1)	1641.8 156.3	0.0117 100.2 100.2	3.9918 [4.0000]	99.8%			
PFHxA	(313.0 / 269.0) 262203 (313.0 / 119.0) 21896	(6.37, 1.00) (0.00, N/A, 0.1)	1017.4 474.9	0.0835 92.9 92.9	2.0687 [2.0000]	103.4%			
PFHpA	(363.0 / 319.0) 232160 (363.0 / 169.0) 65071	(7.29, 1.00) (0.00, N/A, 0.1)	777.9 681.6	0.2803 97.7 97.7	1.9181 [2.0000]	95.9%			
PFOA	(413.0 / 369.0) 274652 (413.0 / 169.0) 83642	(8.11, 1.00) (0.00, N/A, 0.1)	688.7 630.5	0.3045 94.1 94.1	2.1336 [2.0000]	106.7%			
PFNA	(463.0 / 419.0) 192853 (463.0 / 169.0) 42438	(8.85, 1.00) (0.00, N/A, -0.3)	447.9 220.2	0.2201 109.3 109.3	2.0769 [2.0000]	103.8%			
PFDA	(513.0 / 469.0) 234313 (513.0 / 169.0) 24111	(9.50, 1.00) (0.00, N/A, -0.3)	451.7 4709.1	0.1029 115.9 115.9	1.9027 [2.0000]	95.1%			
PFUnA	(563.0 / 519.0) 295747 (563.0 / 169.0) 30286	(9.80, 1.00) (0.00, N/A, 0.3)	626.2 4085.2	0.1024 95.3 95.3	1.8995 [2.0000]	95.0%			
PFDoA	(613.0 / 569.0) 376485 (613.0 / 169.0) 56337	(9.95, 1.00) (0.00, N/A, 0.0)	843.2 1398.5	0.1496 125.7 125.7	2.1775 [2.0000]	108.9%			
PFTTrDA	(663.0 / 619.0) 325307 (663.0 / 169.0) 71050	(10.07, 1.01) (N/A, 0.00, 0.0)	702.4 487.5	0.2184 117.3 117.3	2.1420 [2.0000]	107.1%			
PFTeDA	(713.0 / 669.0) 285976 (713.0 / 169.0) 51891	(10.17, 1.00) (0.00, N/A, -0.1)	1007.1 392.3	0.1815 92.2 92.2	2.0712 [2.0000]	103.6%			

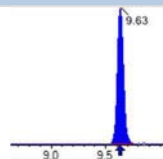
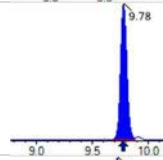
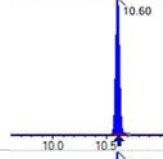
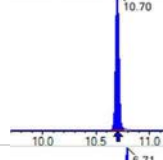
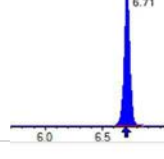
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 341791 (298.9 / 99.0) 229688	(6.34, 1.00) (0.00, N/A, 0.0)	1922.7 1578.4	0.6720 99.2 99.2	1.7446 [1.7695]	98.6%			
PFPeS	(349.0 / 80.0) 623941 (349.0 / 99.0) 240498	(7.38, 0.89) (N/A, 0.01, 0.1)	1449.1 1454.4	0.3854 105.7 105.7	1.8091 [1.8768]	96.4%			
PFHxS	(399.0 / 80.0) 532964 (399.0 / 99.0) 181808	(8.25, 1.00) (0.00, N/A, 0.1)	180239.8 800578.2	0.3411 98.9 98.9	1.7428 [1.8220]	95.7%			
PFHpS	(449.0 / 80.0) 537097 (449.0 / 99.0) 138505	(9.01, 0.94) (N/A, 0.01, 0.0)	1527.5 1015.9	0.2579 90.7 90.7	1.9017 [1.9028]	99.9%			
PFOS	(499.0 / 80.0) 618109 (499.0 / 99.0) 142161	(9.61, 1.00) (0.00, N/A, -0.2)	365.9 444.3	0.2300 89.3 89.3	1.7667 [1.8550]	95.2%			
PFNS	(549.0 / 80.0) 776987 (549.0 / 99.0) 183656	(9.84, 1.02) (N/A, 0.00, 0.0)	1159.8 640.7	0.2364 98.9 98.9	1.8913 [1.9198]	98.5%			
PFDS	(599.0 / 80.0) 945224 (599.0 / 99.0) 227305	(9.97, 1.04) (N/A, 0.00, 0.0)	1098.6 909.4	0.2405 103.4 103.4	1.8372 [1.9262]	95.4%			
PFDoS	(698.9 / 80.0) 525013 (698.9 / 99.0) 120787	(10.15, 1.06) (N/A, 0.00, 0.0)	1296.7 684.6	0.2301 99.3 99.3	1.7206 [1.9391]	88.7%			
4:2FTS	(327.0 / 307.0) 471746 (327.0 / 81.0) 273478	(6.02, 1.00) (0.00, N/A, 0.0)	2333.0 1368.2	0.5797 97.1 97.1	7.1259 [7.4762]	95.3%			
6:2FTS	(427.0 / 407.0) 283630 (427.0 / 81.0) 210114	(7.75, 1.00) (0.00, N/A, 0.1)	1685.9 1448.2	0.7408 103.0 103.0	7.7695 [7.5923]	102.3%			
8:2FTS	(527.0 / 507.0) 256309 (527.0 / 81.0) 163447	(9.17, 1.00) (0.00, N/A, -0.1)	1361.5 980.6	0.6377 102.3 102.3	7.5514 [7.6663]	98.5%			

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) 1028224 (498.0 / 478.0) 19818	(10.22, 1.00) (0.00, N/A, 0.0)	1209.2 483.5	0.0193 80.7 80.7	1.9763 [2.0000]	98.8%			
NMeFOSA	(511.9 / 219.0) 918652 (511.9 / 169.0) 607401	(10.64, 1.00) (0.00, N/A, 0.0)	1724.9 1574.8	0.6612 99.1 99.1	7.6493 [8.0000]	95.6%			
NEIFOSA	(526.0 / 219.0) 965341 (526.0 / 169.0) 1014670	(10.73, 1.00) (0.00, N/A, 0.0)	2661.7 2876.4	1.0511 96.5 96.5	7.4036 [8.0000]	92.5%			
NMeFOSAA	(570.0 / 419.0) 130661 (570.0 / 483.0) 58487	(9.64, 1.00) (0.00, N/A, 0.0)	1490.3 62446.6	0.4476 96.5 96.5	2.2670 [2.0000]	113.3%			
NEIFOSAA	(584.0 / 419.0) 112832 (584.0 / 526.0) 73691	(9.78, 1.00) (0.00, N/A, 0.1)	598.9 514.8	0.6531 107.6 107.6	2.3361 [2.0000]	116.8%			
NMeFOSE	(616.1 / 59.0) 234108	(10.61, 1.00) (0.01, N/A, 0.0)	1346.1	N/A 0.0 0.0	6.8971 [8.0000]	86.2%			
NEtFOSE	(630.0 / 59.0) 61825	(10.70, 1.00) (0.01, N/A, 0.0)	1283.2	N/A 0.0 0.0	7.5125 [8.0000]	93.9%			
HFPO-DA	(285.0 / 169.0) 221691 (285.0 / 185.0) 630496	(6.72, 1.00) (0.00, N/A, 0.0)	1224.8 1291.9	2.8440 102.6 102.6	4.0302 [4.0000]	100.8%			
ADONA	(377.0 / 85.0) 858385 (377.0 / 251.0) 104733	(7.61, 1.13) (N/A, 0.01, 0.0)	2279.9 471.5	0.1220 97.1 97.1	3.8593 [3.7708]	102.3%			
9CI-Pf3ONS	(531.0 / 351.0) 2455621 (533.0 / 353.0) 762245	(9.80, 1.46) (N/A, 0.00, 0.0)	1064.4 1291.8	0.3104 93.0 93.0	4.0120 [3.7330]	107.5%			
11CI-PF3OUDS	(631.0 / 451.0) 1619127 (633.0 / 453.0) 528085	(10.05, 1.50) (N/A, 0.00, 0.0)	1070.7 1879.8	0.3262 100.8 100.8	3.8448 [3.7728]	101.9%			

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) 32161 (241.0 / 117.0) 55716	(4.73, 0.90) (N/A, 0.00, 0.1)	700.9 673.5	1.7324 99.5 99.5	7.0093 [8.0000]	87.6%			
5:3FTCA	(341.0 / 236.7) 210933 (341.0 / 217.0) 333902	(7.00, 1.10) (N/A, 0.01, 0.0)	1202.7 1033.6	1.5830 92.7 92.7	7.8332 [8.0000]	97.9%			
7:3FTCA	(441.0 / 317.0) 259942 (441.0 / 337.0) 214943	(8.82, 1.39) (N/A, 0.01, 0.0)	499.3 883.7	0.8269 100.2 100.2	7.4975 [8.0000]	93.7%			
PFEESA	(315.0 / 135.0) 446293 (315.0 / 83.0) 136453	(6.84, 1.07) (N/A, 0.01, -0.1)	1293.8 815.5	0.3057 102.8 102.8	3.4435 [3.5698]	96.5%			
PFMPA	(229.0 / 85.0) 97664	(4.41, 0.84) (N/A, -0.01, 0.0)	1518.8	N/A 0.0 0.0	3.7974 [4.0000]	94.9%			
PFMBA	(279.0 / 85.0) 281864	(5.61, 1.07) (N/A, 0.00, 0.0)	1894.7	N/A 0.0 0.0	3.5164 [4.0000]	87.9%			
NFDHA	(201.0 / 85.0) 14173 (295.0 / 201.0) 74912	(6.25, 0.98) (N/A, 0.01, 0.0)	375.0 1132.5	5.2854 75.5 75.5	4.5494 [4.0000]	113.7%			
13C3_PFBA_IIS	(216.0 / 172.0) 104227	(3.88, N/A) (N/A, -0.02, N/A)	2044.1	N/A	1.0843 [1.0000]	108.4% { 102.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 125484	(6.37, N/A) (N/A, 0.01, N/A)	812.3	N/A	1.0162 [1.0000]	101.6% { 101.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 125229	(8.10, N/A) (N/A, 0.01, N/A)	1167.1	N/A	1.0563 [1.0000]	105.6% { 111.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 111545	(8.85, N/A) (N/A, 0.01, N/A)	1135.2	N/A	1.1712 [1.0000]	117.1% { 108.6% }			

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) 89091	(9.50, N/A) (N/A, 0.01, N/A)	731.3	N/A	1.0814 [1.0000]	108.1% { 100.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 228225	(8.25, N/A) (N/A, 0.01, N/A)	1475.1	N/A	1.0633 [1.0000]	106.3% { 103.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 205563	(9.61, N/A) (N/A, 0.01, N/A)	789.5	N/A	1.1044 [1.0000]	110.4% { 101.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 739976	(3.88, N/A) (N/A, -0.02, N/A)	2627.3	N/A	7.5727 [8.0000]	94.7% { 94.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 388638	(5.23, N/A) (N/A, 0.00, N/A)	2337.5	N/A	4.2457 [4.0000]	106.1% { 104.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 251504	(6.37, N/A) (N/A, 0.01, N/A)	1482.9	N/A	1.9650 [2.0000]	98.2% { 94.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 238969	(7.29, N/A) (N/A, 0.01, N/A)	1554.0	N/A	2.0684 [2.0000]	103.4% { 105.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 249756	(8.11, N/A) (N/A, 0.01, N/A)	1340.8	N/A	1.9608 [2.0000]	98.0% { 98.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 96314	(8.84, N/A) (N/A, 0.01, N/A)	802.2	N/A	0.8750 [1.0000]	87.5% { 104.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 121389	(9.50, N/A) (N/A, 0.01, N/A)	139254.1	N/A	0.9380 [1.0000]	93.8% { 98.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 176865	(9.80, N/A) (N/A, 0.00, N/A)	537.4	N/A	1.0182 [1.0000]	101.8% { 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
13C2_PFDa_EIS	(615.0 / 570.0) 187913	(9.96, N/A) (N/A, 0.00, N/A)	310.1	N/A	0.8914 [1.0000]	89.1% { 81.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 140071	(10.17, N/A) (N/A, 0.00, N/A)	723.1	N/A	0.9051 [1.0000]	90.5% { 94.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 641820	(6.34, N/A) (N/A, 0.01, N/A)	2880.9	N/A	1.9135 [2.0000]	95.7% { 99.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 364799	(8.25, N/A) (N/A, 0.01, N/A)	1596.6	N/A	1.9107 [2.0000]	95.5% { 98.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 623261	(9.61, N/A) (N/A, 0.00, N/A)	888.7	N/A	1.9889 [2.0000]	99.4% { 101.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 75802	(6.02, N/A) (N/A, 0.01, N/A)	859.0	N/A	4.0071 [4.0000]	100.2% { 104.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 92055	(7.75, N/A) (N/A, 0.01, N/A)	884.5	N/A	3.6271 [4.0000]	90.7% { 97.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 86453	(9.17, N/A) (N/A, 0.01, N/A)	1081.2	N/A	3.9246 [4.0000]	98.1% { 97.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 936961	(10.22, N/A) (N/A, 0.00, N/A)	1317.7	N/A	1.9586 [2.0000]	97.9% { 105.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 261332	(10.64, N/A) (N/A, 0.00, N/A)	1214.0	N/A	1.8460 [2.0000]	92.3% { 100.5% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 251809	(10.72, N/A) (N/A, 0.00, N/A)	1425.9	N/A	1.9618 [2.0000]	98.1% { 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) 264364	(9.63, N/A) (N/A, 0.01, N/A)	874.7	N/A	3.7919 [4.0000]	94.8% { 96.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 210526	(9.78, N/A) (N/A, 0.00, N/A)	698.5	N/A	3.5133 [4.0000]	87.8% { 91.2% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 482858	(10.60, N/A) (N/A, 0.00, N/A)	1769.3	N/A	19.9696 [20.0000]	99.8% { 106.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 240368	(10.70, N/A) (N/A, 0.00, N/A)	2220.9	N/A	19.5101 [20.0000]	97.6% { 101.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 662583	(6.71, N/A) (N/A, 0.01, N/A)	1335.7	N/A	7.8601 [8.0000]	98.3% { 98.7% }			

LOW-CONCENTRATION CALIBRATION VERIFICATION

Laboratory:

SDG:

Client:

Project:

Calibration:

Laboratory ID:

Sequence:

Standard ID:

ANALYTE	EXPECTED	FOUND	% DRIFT	QC LIMIT

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

Laboratory:

Work Order:

Client:

Project:

Instrument ID:

Calibration:

Standard ID:

Sequence:

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
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+/- %

INITIAL AND CONTINUING CALIBRATION CHECK

Laboratory:

Client:

Instrument ID:

Standard ID:

Work Order:

Project:

Calibration:

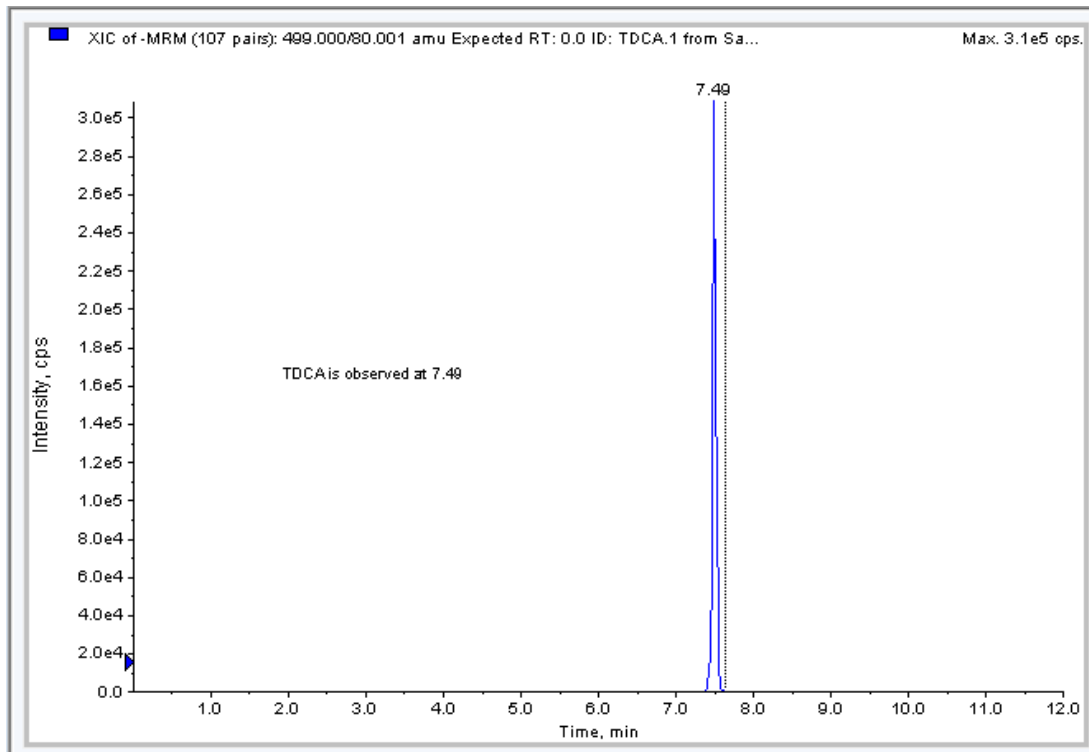
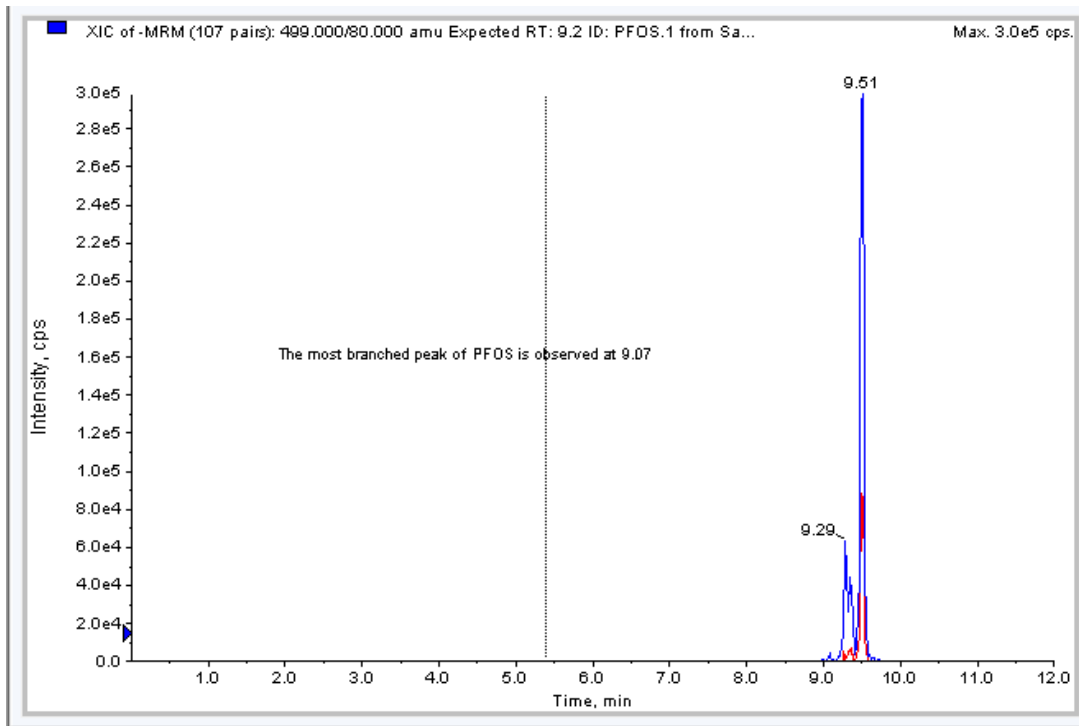
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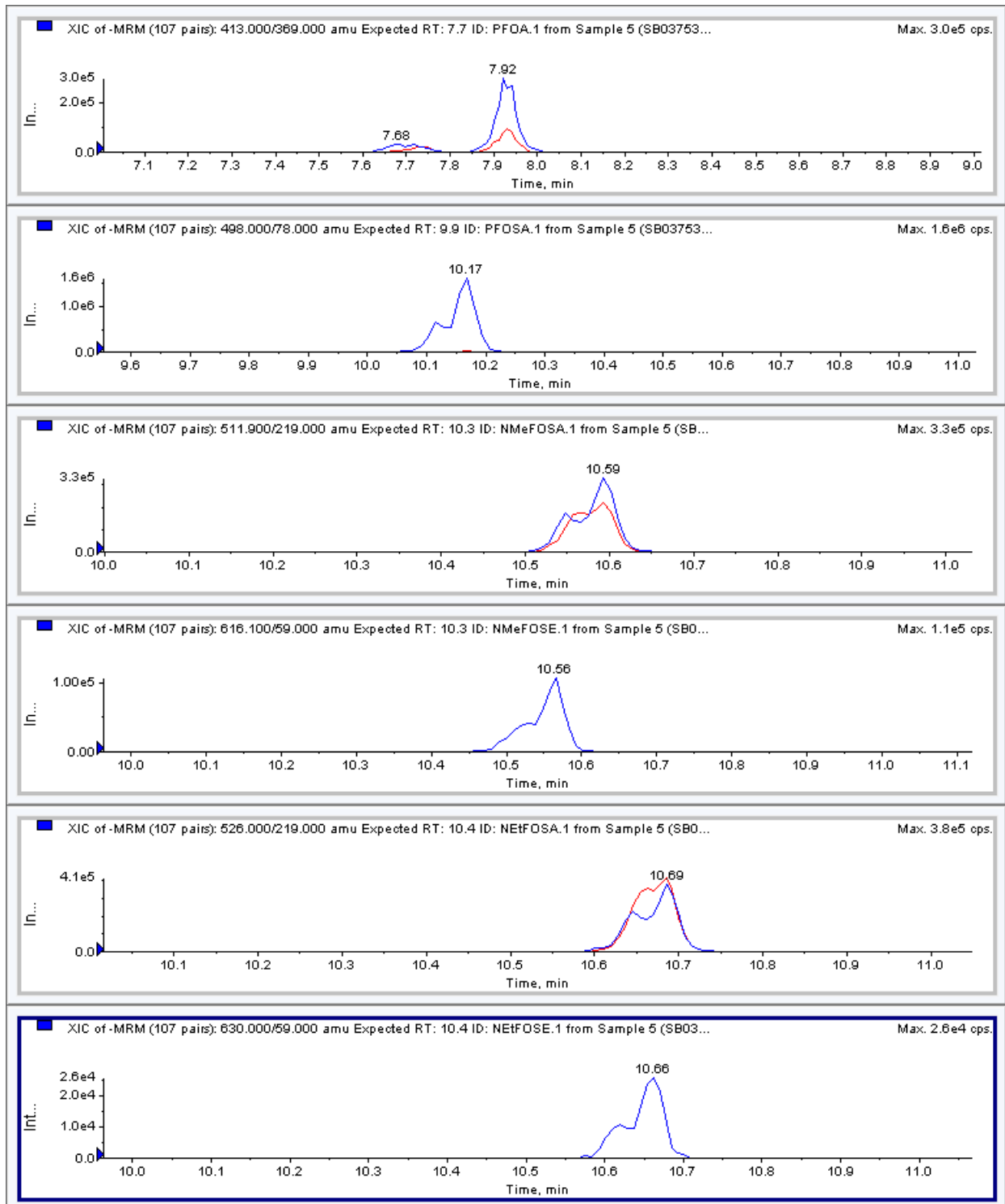
TDCA vs PFOS- S2022-12-08B



9.07-7.49= 1.58

1.58 > 1 Pass

Column RES2022-12-08B



QUALITY CONTROL RAW DATA

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SAMPLE DATA

FORM I ANALYSIS DATA SHEET

ADIT6-IDW-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-01
		File ID:	S2022-12-21B (10)
Sampled:	12/02/22 19:10	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 20:35
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	107.51 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	170	7.4	3.7	0.98	
PFPEA	160	3.7	3.7	0.30	
PFHXA	420	1.9	1.9	0.26	
PFHPA	53	1.9	0.93	0.19	
PFOA	30	1.9	0.93	0.70	
PFNA	3.1	1.9	0.93	0.38	
PFDA	5.2	1.9	0.93	0.47	IR2
PFUnA	3.0	1.9	0.93	0.74	IR2
PFDOA	0.93 U	1.9	0.93	0.51	IR2,
PFTRDA	1.4 U	1.9	1.4	0.93	
PFTEDA	0.93 U	1.9	0.93	0.93	
PFBS	3.9	1.9	0.93	0.17	
PFPEs	0.93 U	1.9	0.93	0.29	
PFHXS	1.3 J	1.9	0.93	0.15	
PFHPS	0.93 U	1.9	0.93	0.24	
PFOS	33	1.9	0.93	0.30	
PFNS	0.93 U	1.9	0.93	0.56	
PFDS	0.93 U	1.9	0.93	0.70	
PFDOS	0.93 U	1.9	0.93	0.56	
4:2FTS	110	7.4	3.7	1.3	
8:2FTS	3.7 U	7.4	3.7	0.38	
PFOSA	0.93 U	1.9	0.93	0.47	
NMeFOSA	3.7 U	7.4	3.7	2.2	
NEtFOSA	3.7 U	7.4	3.7	1.9	
NMeFOSAA	0.93 U	1.9	0.93	0.51	
NEtFOSAA	0.93 U	1.9	0.93	0.51	
NMeFOSE	5.6 U	7.4	5.6	4.7	
NEtFOSE	5.6 U	7.4	5.6	4.7	
HFPO-DA	1.9 U	3.7	1.9	0.79	
ADONA	1.9 U	3.7	1.9	0.56	

FORM I ANALYSIS DATA SHEET

ADIT6-IDW-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-01
		File ID:	S2022-12-21B (10)
Sampled:	12/02/22 19:10	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 20:35
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	107.51 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFEEESA	1.9 U	3.7	1.9	0.51	
PFMPA	1.9 U	3.7	1.9	0.25	
PFMBA	1.9 U	3.7	1.9	0.42	
NFDHA	1.9 U	3.7	1.9	1.4	
9CL-PF3ONS	1.9 U	3.7	1.9	0.98	
11CL-PF3OUDS	1.9 U	3.7	1.9	0.98	
3:3FTCA	4.2 J	7.4	3.7	2.7	
5:3FTCA	150	7.4	3.7	2.0	
7:3FTCA	3.7 U	7.4	3.7	2.6	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (10)
 Acquired: 2022/12/21 - 20:35

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) 1059928	(3.66, 1.00) (0.00, N/A, 0.0)	68.8	N/A 0.0 0.0	9.1958	N/A			
PFPeA	(262.9 / 219.0) 1590892 (262.9 / 69.0) 16524	(4.99, 1.00) (0.00, N/A, 0.0)	681.7 218.5	0.0104 92.8 89.6	8.8486	N/A			
PFHxA	(313.0 / 269.0) 6548971 (313.0 / 119.0) 627308	(6.15, 1.00) (0.00, N/A, 0.1)	617.7 669.9	0.0958 98.0 103.3	22.7760	N/A			
PFHpA	(363.0 / 319.0) 677364 (363.0 / 169.0) 194442	(7.07, 1.00) (0.00, N/A, -0.1)	562.1 502.9	0.2871 92.2 92.1	2.8344	N/A			
PFOA	(413.0 / 369.0) 338175 (413.0 / 169.0) 104813	(7.89, 1.00) (0.00, N/A, 0.2)	541.4 582.7	0.3099 94.8 94.2	1.6095	N/A			
PFNA	(463.0 / 419.0) 27751 (463.0 / 169.0) 6106	(8.63, 1.00) (0.01, N/A, -0.3)	124.0 32.5	0.2200 114.2 95.9	0.1643	N/A			
PFDA	(513.0 / 469.0) 61450 (513.0 / 169.0) 9553	(9.30, 1.00) (0.00, N/A, -0.6)	185.6 81.2	0.1555 162.6 144.0	0.2818	N/A			IR2,
PFUnA	(563.0 / 519.0) 20211 (563.0 / 169.0) 3581	(9.71, 1.00) (0.00, N/A, 0.7)	55.8 28.2	0.1772 204.0 172.9	0.1606	N/A			IR2,
PFDoA	(613.0 / 569.0) 6204 (613.0 / 169.0) 1114	(9.89, 1.00) (-0.01, N/A, 0.1)	48.9 15.3	0.1795 129.0 153.1	0.0235	N/A			IR2,
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.: 22L0023-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (10)
 Acquired: 2022/12/21 - 20:35

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) 94210 (298.9 / 99.0) 66890	(6.10, 1.00) (0.00, N/A, 0.1)	282.4 268.9	0.7100 115.4 113.7	0.2111	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) 35943 (399.0 / 99.0) 13006	(8.01, 1.00) (0.00, N/A, 0.3)	196.1 667.4	0.3619 107.7 106.5	0.0692	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) 965676 (499.0 / 99.0) 241051	(9.45, 1.00) (0.00, N/A, 0.0)	311.9 291.1	0.2496 102.6 116.3	1.7625	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) 19994 (599.0 / 99.0) 2708	(9.90, 1.05) (N/A, -0.02, 1.7)	47.1 22.2	0.1355 60.2 65.3	0.0296	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) 1558663 (327.0 / 81.0) 857002	(5.82, 1.00) (0.00, N/A, 0.3)	619.4 515.3	0.5498 111.3 106.6	5.6769	N/A			
6:2FTS	(427.0 / 407.0) 55272312 (427.0 / 81.0) 41109967	(7.54, 1.00) (0.00, N/A, 0.1)	683.8 662.2	0.7438 95.6 114.9	419.9022	N/A			E,
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			

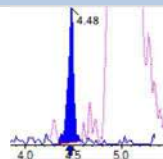
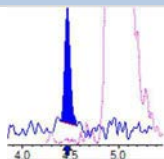
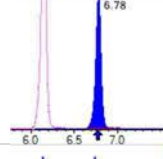
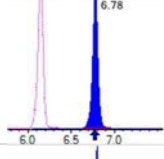
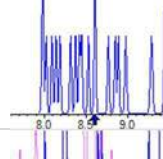
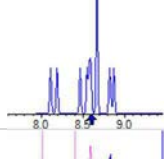
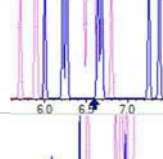
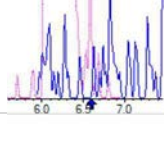
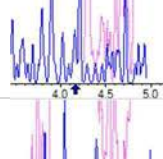
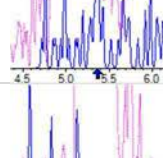
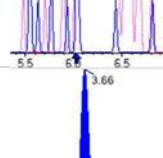
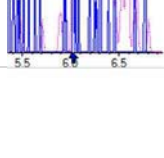
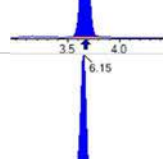
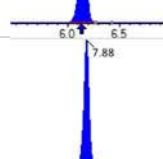
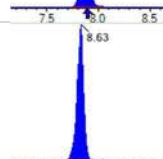



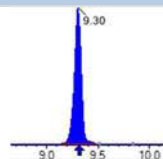
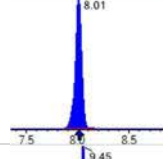
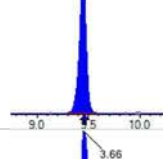
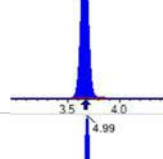
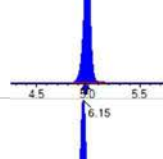
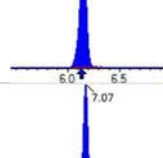
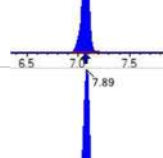
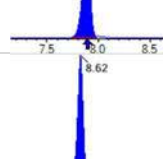
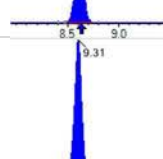
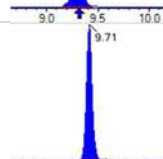
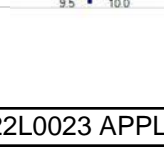
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 Instrument: Saphira
 Type: Sciex Q3 5500

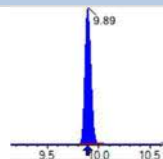
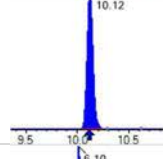
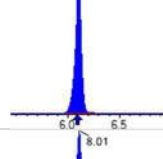
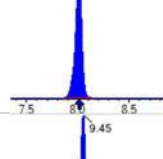
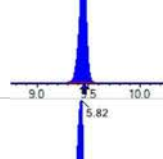
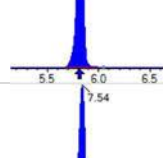
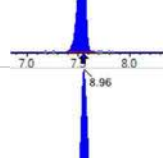
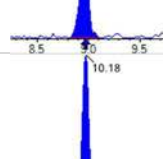
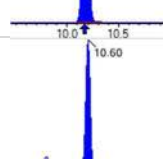
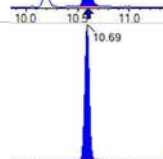
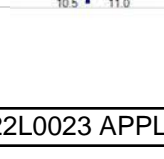
Sample I.D.: 22L0023-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

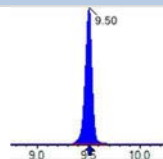
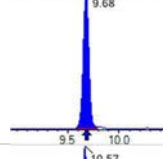
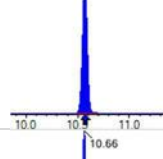
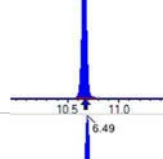
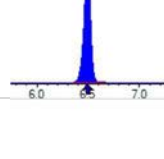
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (10)
 Acquired: 2022/12/21 - 20:35

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) 1394 (241.0 / 117.0) 2337	(4.48, 0.90) (N/A, 0.02, 0.5)	69.4 36.0	1.6766 100.2 97.4	0.2246	N/A			
5:3FTCA	(341.0 / 236.7) 400874 (341.0 / 217.0) 588629	(6.78, 1.10) (N/A, 0.01, 0.1)	587.2 634.6	1.4684 100.3 94.8	7.8901	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 183254	(3.66, N/A) (N/A, 0.00, N/A)	513.2	N/A	1.3165 [1.0000]	131.7% { 112.4% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 303342	(6.15, N/A) (N/A, 0.01, N/A)	512.7	N/A	1.3136 [1.0000]	131.4% { 135.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 226191	(7.88, N/A) (N/A, 0.00, N/A)	722.5	N/A	1.0288 [1.0000]	102.9% { 92.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 194005	(8.63, N/A) (N/A, 0.00, N/A)	441.4	N/A	1.0477 [1.0000]	104.8% { 107.6% }			

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) 190090	(9.30, N/A) (N/A, -0.01, N/A)	391.1	N/A	1.0286 [1.0000]	102.9% { 95.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 410768	(8.01, N/A) (N/A, 0.00, N/A)	784.1	N/A	1.0175 [1.0000]	101.7% { 99.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 297313	(9.45, N/A) (N/A, -0.01, N/A)	386.8	N/A	0.9315 [1.0000]	93.1% { 88.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1413425	(3.66, N/A) (N/A, -0.01, N/A)	841.3	N/A	7.4940 [8.0000]	93.7% { 112.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 818852	(4.99, N/A) (N/A, 0.02, N/A)	694.8	N/A	3.8797 [4.0000]	97.0% { 123.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 669611	(6.15, N/A) (N/A, 0.01, N/A)	659.6	N/A	1.9182 [2.0000]	95.9% { 126.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 524345	(7.07, N/A) (N/A, 0.00, N/A)	657.4	N/A	1.7219 [2.0000]	86.1% { 112.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 427329	(7.89, N/A) (N/A, 0.00, N/A)	635.8	N/A	1.7227 [2.0000]	86.1% { 83.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 196810	(8.62, N/A) (N/A, -0.01, N/A)	471.6	N/A	0.9225 [1.0000]	92.3% { 107.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 229110	(9.31, N/A) (N/A, 0.00, N/A)	337.4	N/A	0.8474 [1.0000]	84.7% { 91.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 159286	(9.71, N/A) (N/A, -0.01, N/A)	337.4	N/A	0.4142 [1.0000]	41.4% { 49.5% }			

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_EIS	(615.0 / 570.0) 306384	(9.89, N/A) (N/A, 0.00, N/A)	581.0	N/A	0.7982 [1.0000]	79.8% { 83.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 158683	(10.12, N/A) (N/A, 0.00, N/A)	315.0	N/A	0.6225 [1.0000]	62.3% { 57.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1627879	(6.10, N/A) (N/A, 0.02, N/A)	620.5	N/A	2.3439 [2.0000]	117.2% { 115.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 669084	(8.01, N/A) (N/A, 0.00, N/A)	911.9	N/A	1.8107 [2.0000]	90.5% { 96.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1009550	(9.45, N/A) (N/A, -0.01, N/A)	525.8	N/A	1.9785 [2.0000]	98.9% { 94.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 332149	(5.82, N/A) (N/A, 0.02, N/A)	627.6	N/A	5.6466 [4.0000]	141.2% { 147.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 342448	(7.54, N/A) (N/A, -0.01, N/A)	540.8	N/A	4.8354 [4.0000]	120.9% { 118.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 73476	(8.96, N/A) (N/A, -0.01, N/A)	128.4	N/A	1.0364 [4.0000]	25.9% { 32.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1044424	(10.18, N/A) (N/A, 0.00, N/A)	696.9	N/A	1.6193 [2.0000]	81.0% { 73.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 152588	(10.60, N/A) (N/A, -0.01, N/A)	245.0	N/A	1.0835 [2.0000]	54.2% { 45.0% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 131263	(10.69, N/A) (N/A, -0.01, N/A)	940.1	N/A	1.0097 [2.0000]	50.5% { 43.5% }			

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 627753	(9.50, N/A) (N/A, 0.00, N/A)	402.9	N/A	5.1736 [4.0000]	129.3% { 108.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 405501	(9.68, N/A) (N/A, -0.01, N/A)	426.3	N/A	3.7916 [4.0000]	94.8% { 89.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 380039	(10.57, N/A) (N/A, 0.00, N/A)	1374.5	N/A	19.2192 [20.0000]	96.1% { 81.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 160639	(10.66, N/A) (N/A, 0.00, N/A)	1158.5	N/A	17.8446 [20.0000]	89.2% { 73.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1379952	(6.49, N/A) (N/A, 0.01, N/A)	794.8	N/A	7.4353 [8.0000]	92.9% { 113.5% }			

FORM I ANALYSIS DATA SHEET

ADIT6-IDW-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-01RE1
		File ID:	S2022-12-21B (11)
Sampled:	12/02/22 19:10	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 20:47
Solids:		Preparation:	PFAS Leachates
		Dilution:	10
Initial/Final:	107.51 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
6:2FTS	9700	74	37	14	

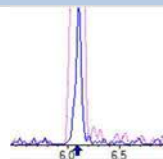
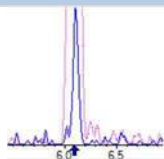
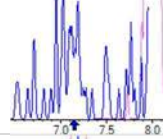
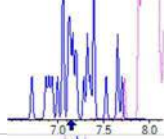
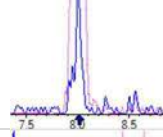
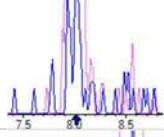
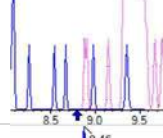
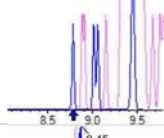
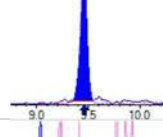
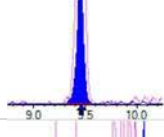
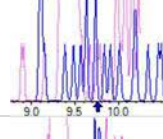
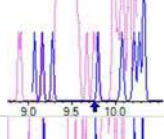
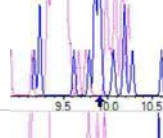
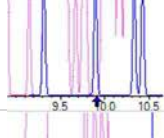
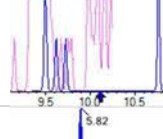
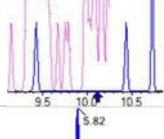
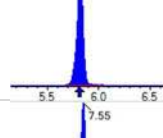
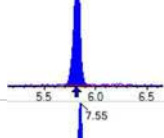
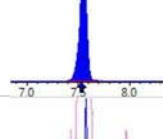
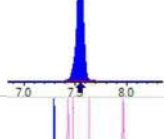
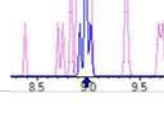
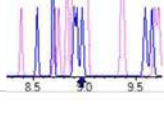


Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0023-01RE1@10
DF, IV: 1, 1.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (11)
Acquired: 2022/12/21 - 20:47

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) 95465	(3.69, 1.00) (0.00, N/A, 0.0)	49.9	N/A 0.0 0.0	0.8678	N/A			
PFPeA	(262.9 / 219.0) 138482 (262.9 / 69.0) 1698	(5.00, 1.00) (0.00, N/A, 0.0)	498.3 38.9	0.0123 109.6 105.8	0.8659	N/A			
PFHxA	(313.0 / 269.0) 570334 (313.0 / 119.0) 54980	(6.15, 1.00) (0.00, N/A, -0.3)	500.0 279.5	0.0964 98.6 104.0	2.3126	N/A			
PFHpA	(363.0 / 319.0) 69429 (363.0 / 169.0) 15657	(7.07, 1.00) (0.00, N/A, 0.4)	195.8 100.7	0.2255 72.4 72.3	0.3208	N/A			
PFOA	(413.0 / 369.0) 34801 (413.0 / 169.0) 10857	(7.89, 1.00) (0.00, N/A, 0.5)	122.1 155.5	0.3120 95.5 94.8	0.1472	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			

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) 99166 (499.0 / 99.0) 28839	(9.46, 1.00) (0.00, N/A, 0.4)	131.1 170.5	0.2908 119.6 135.5	0.1683	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) 121812 (327.0 / 81.0) 66687	(5.82, 1.00) (0.00, N/A, 0.1)	504.8 330.9	0.5475 110.8 106.1	0.4778	N/A			
6:2FTS	(427.0 / 407.0) 9135870 (427.0 / 81.0) 7294638	(7.55, 1.00) (-0.01, N/A, 0.1)	777.7 777.6	0.7985 102.6 123.3	52.0822	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			

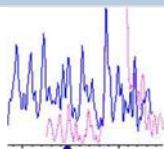
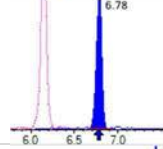
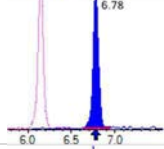
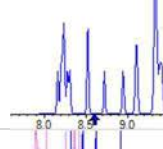
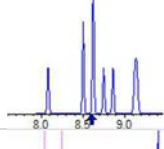
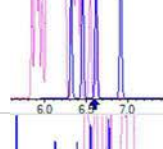
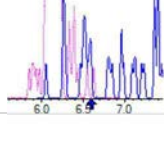
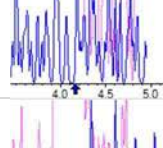
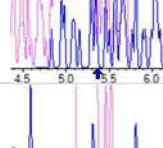
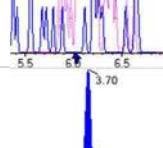
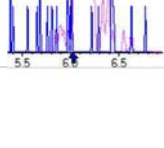
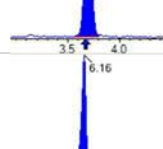
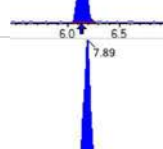
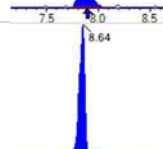



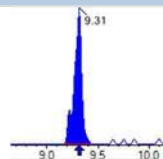
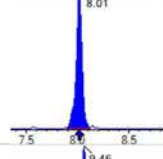
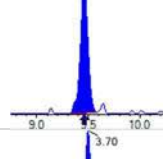
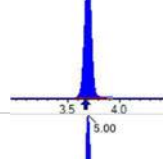
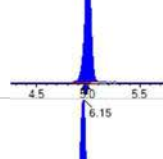
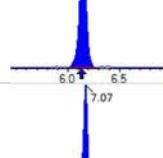
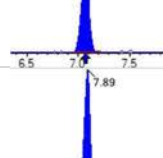
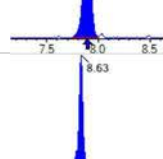
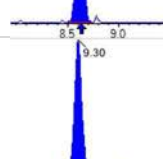
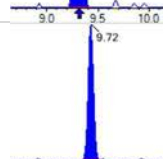
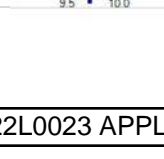
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

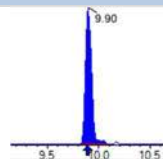
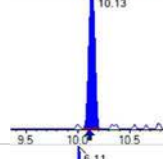
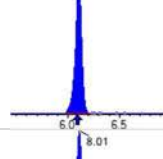
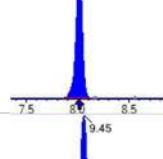
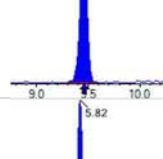
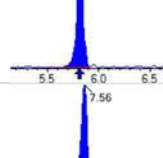
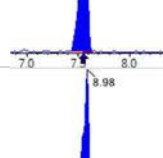
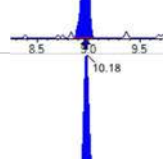
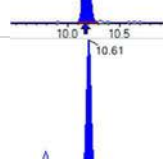
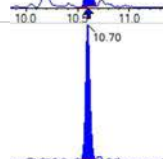
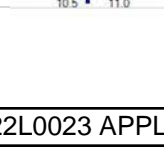
Sample I.D.: 22L0023-01RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

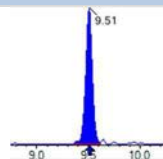
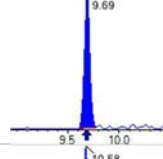
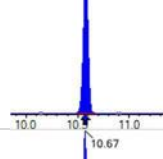
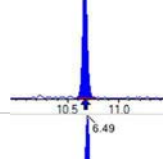
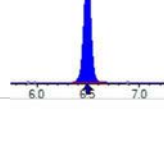
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (11)
 Acquired: 2022/12/21 - 20:47

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			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (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) 36991 (341.0 / 217.0) 51330	(6.78, 1.10) (N/A, 0.01, 0.3)	283.9 213.6	1.3876 94.8 89.6	0.8489	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 16943	(3.70, N/A) (N/A, 0.03, N/A)	327.7	N/A	1.2172 [1.0000]	121.7% { 10.4% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 30004	(6.16, N/A) (N/A, 0.02, N/A)	340.0	N/A	1.2993 [1.0000]	129.9% { 13.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 24795	(7.89, N/A) (N/A, 0.00, N/A)	368.0	N/A	1.1278 [1.0000]	112.8% { 10.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 16389	(8.64, N/A) (N/A, 0.01, N/A)	124.3	N/A	0.8850 [1.0000]	88.5% { 9.1% }			

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_IIS	(515.1 / 470.1) 17046	(9.31, N/A) (N/A, 0.00, N/A)	82.0	N/A	0.9224 [1.0000]	92.2% { 8.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 47905	(8.01, N/A) (N/A, 0.00, N/A)	420.6	N/A	1.1866 [1.0000]	118.7% { 11.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 31996	(9.46, N/A) (N/A, 0.01, N/A)	115.5	N/A	1.0024 [1.0000]	100.2% { 9.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 134899	(3.70, N/A) (N/A, 0.03, N/A)	680.7	N/A	0.7736 [0.8000]	96.7% { 10.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 72843	(5.00, N/A) (N/A, 0.02, N/A)	513.6	N/A	0.3489 [0.4000]	87.2% { 11.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 57432	(6.15, N/A) (N/A, 0.01, N/A)	375.6	N/A	0.1663 [0.2000]	83.2% { 10.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 47486	(7.07, N/A) (N/A, 0.00, N/A)	351.9	N/A	0.1576 [0.2000]	78.8% { 10.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 48099	(7.89, N/A) (N/A, 0.01, N/A)	271.4	N/A	0.1769 [0.2000]	88.4% { 9.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 22879	(8.63, N/A) (N/A, 0.00, N/A)	229.3	N/A	0.1270 [0.1000]	127.0% { 12.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 21765	(9.30, N/A) (N/A, -0.01, N/A)	145.3	N/A	0.0898 [0.1000]	89.8% { 8.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 28210	(9.72, N/A) (N/A, 0.01, N/A)	381.1	N/A	0.0818 [0.1000]	81.8% { 8.8% }			

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_EIS	(615.0 / 570.0) 36282	(9.90, N/A) (N/A, 0.00, N/A)	371.1	N/A	0.1054 [0.1000]	105.4% {9.8%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 17877	(10.13, N/A) (N/A, 0.02, N/A)	101.8	N/A	0.0782 [0.1000]	78.2% {6.5%}			
13C3_PFBs_EIS	(302.0 / 80.0) 151177	(6.11, N/A) (N/A, 0.02, N/A)	437.2	N/A	0.1866 [0.2000]	93.3% {10.8%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 78194	(8.01, N/A) (N/A, 0.00, N/A)	542.0	N/A	0.1814 [0.2000]	90.7% {11.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 108540	(9.45, N/A) (N/A, 0.00, N/A)	234.6	N/A	0.1977 [0.2000]	98.8% {10.2%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 30844	(5.82, N/A) (N/A, 0.02, N/A)	278.4	N/A	0.4496 [0.4000]	112.4% {13.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 45635	(7.56, N/A) (N/A, 0.01, N/A)	319.8	N/A	0.5525 [0.4000]	138.1% {15.8%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 21462	(8.98, N/A) (N/A, 0.02, N/A)	156.5	N/A	0.2596 [0.4000]	64.9% {9.5%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 134309	(10.18, N/A) (N/A, 0.00, N/A)	368.8	N/A	0.1935 [0.2000]	96.7% {9.5%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 16889	(10.61, N/A) (N/A, 0.00, N/A)	107.9	N/A	0.1114 [0.2000]	55.7% {5.0%}			
D5_NEiFOsa_EIS	(531.1 / 169.0) 13416	(10.70, N/A) (N/A, 0.00, N/A)	168.0	N/A	0.0959 [0.2000]	47.9% {4.4%}			

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) 59442	(9.51, N/A) (N/A, 0.00, N/A)	202.3	N/A	0.4552 [0.4000]	113.8% { 10.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 48598	(9.69, N/A) (N/A, 0.01, N/A)	140.2	N/A	0.4222 [0.4000]	105.6% { 10.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 42953	(10.58, N/A) (N/A, 0.01, N/A)	506.6	N/A	2.0185 [2.0000]	100.9% { 9.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 15151	(10.67, N/A) (N/A, 0.00, N/A)	320.6	N/A	1.5639 [2.0000]	78.2% { 6.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 129335	(6.49, N/A) (N/A, 0.01, N/A)	456.0	N/A	0.7045 [0.8000]	88.1% { 10.6% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-IDW-SOFD01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-02
		File ID:	S2022-12-21B (12)
Sampled:	12/02/22 19:20	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:00
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	105.04 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	170	7.6	3.8	1.0	
PFPEA	180	3.8	3.8	0.31	
PFHXA	410	1.9	1.9	0.26	
PFHPA	63	1.9	0.95	0.20	
PFOA	29	1.9	0.95	0.71	
PFNA	3.7	1.9	0.95	0.39	
PFDA	9.0	1.9	0.95	0.48	
PFUnA	4.6	1.9	0.95	0.76	IR2
PFDOA	0.81 J	1.9	0.95	0.52	
PFTRDA	1.4 U	1.9	1.4	0.95	IR2,
PFTEDA	0.95 U	1.9	0.95	0.95	
PFBS	4.5	1.9	0.95	0.18	
PFPEs	0.95 U	1.9	0.95	0.30	
PFHXS	1.7 J	1.9	0.95	0.15	
PFHPS	0.95 U	1.9	0.95	0.24	
PFOS	55	1.9	0.95	0.30	
PFNS	0.95 U	1.9	0.95	0.57	
PFDS	1.1 J	1.9	0.95	0.71	
PFDOS	0.95 U	1.9	0.95	0.57	
4:2FTS	100	7.6	3.8	1.4	
8:2FTS	3.8 U	7.6	3.8	0.39	
PFOSA	0.95 U	1.9	0.95	0.48	
NMeFOSA	3.8 U	7.6	3.8	2.2	
NEtFOSA	3.8 U	7.6	3.8	2.0	
NMeFOSAA	0.95 U	1.9	0.95	0.52	
NEtFOSAA	0.95 U	1.9	0.95	0.52	
NMeFOSE	5.7 U	7.6	5.7	4.8	
NEtFOSE	5.7 U	7.6	5.7	4.8	
HFPO-DA	1.9 U	3.8	1.9	0.81	
ADONA	1.9 U	3.8	1.9	0.57	

FORM I
ANALYSIS DATA SHEET
ADIT6-IDW-SOFD01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-02
		File ID:	S2022-12-21B (12)
Sampled:	12/02/22 19:20	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:00
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	105.04 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFEEESA	1.9 U	3.8	1.9	0.52	
PFMPA	1.9 U	3.8	1.9	0.26	
PFMBA	1.9 U	3.8	1.9	0.43	
NFDHA	1.9 U	3.8	1.9	1.4	
9CL-PF3ONS	1.9 U	3.8	1.9	1.0	
11CL-PF3OUDS	1.9 U	3.8	1.9	1.0	
3:3FTCA	6.3 J	7.6	3.8	2.7	
5:3FTCA	160	7.6	3.8	2.1	
7:3FTCA	3.8 U	7.6	3.8	2.6	



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0023-02
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (12)
Acquired: 2022/12/21 - 21:00

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) 902102	(3.64, 1.00) (0.00, N/A, 0.0)	66.3	N/A 0.0 0.0	8.7512	N/A			
PFPeA	(262.9 / 219.0) 1575518 (262.9 / 69.0) 16813	(4.94, 1.00) (0.00, N/A, -0.1)	695.1 236.6	0.0107 95.3 92.0	9.6655	N/A			
PFHxA	(313.0 / 269.0) 5611278 (313.0 / 119.0) 520784	(6.11, 1.00) (0.00, N/A, 0.0)	633.0 623.2	0.0928 94.9 100.1	21.4280	N/A			
PFHpA	(363.0 / 319.0) 732462 (363.0 / 169.0) 199716	(7.03, 1.00) (0.00, N/A, 0.2)	647.9 508.3	0.2727 87.5 87.4	3.3204	N/A			
PFOA	(413.0 / 369.0) 281530 (413.0 / 169.0) 88488	(7.84, 1.00) (0.00, N/A, 0.2)	414.3 324.4	0.3143 96.2 95.5	1.5131	N/A			
PFNA	(463.0 / 419.0) 29334 (463.0 / 169.0) 6987	(8.58, 1.00) (0.00, N/A, -0.6)	127.1 36.9	0.2382 123.6 103.8	0.1936	N/A			
PFDA	(513.0 / 469.0) 87682 (513.0 / 169.0) 6755	(9.27, 1.00) (0.01, N/A, 0.5)	169.1 71.9	0.0770 80.6 71.4	0.4748	N/A			
PFUnA	(563.0 / 519.0) 26980 (563.0 / 169.0) 4622	(9.68, 1.00) (0.00, N/A, -0.5)	88.4 29.0	0.1713 197.3 167.2	0.2429	N/A			IR2,
PFDoA	(613.0 / 569.0) 11629 (613.0 / 169.0) 1684	(9.88, 1.00) (0.00, N/A, -0.7)	54.6 21.2	0.1448 104.0 123.4	0.0426	N/A			
PFTrDA	(663.0 / 619.0) 4407 (663.0 / 169.0) 1580	(10.01, 1.01) (N/A, -0.01, -0.3)	21.6 9.4	0.3584 175.1 167.9	0.0187	N/A			IR2,
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.: 22L0023-02
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (12)
Acquired: 2022/12/21 - 21:00

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
PFBS	(298.9 / 80.0) 101626 (298.9 / 99.0) 69323	(6.05, 1.00) (0.00, N/A, -0.1)	267.8 285.6	0.6821 110.8 109.2	0.2375	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) 41681 (399.0 / 99.0) 11341	(7.96, 1.00) (0.00, N/A, -0.2)	245.5 65127.0	0.2721 80.9 80.1	0.0912	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) 1275023 (499.0 / 99.0) 341521	(9.41, 1.00) (0.00, N/A, 0.0)	256.5 401.5	0.2679 110.1 124.8	2.9080	N/A			
PFNS	(549.0 / 80.0) 13528 (549.0 / 99.0) 2545	(9.74, 1.04) (N/A, -0.03, -0.8)	20.3 31.6	0.1882 77.1 75.4	0.0278	N/A			
PFDS	(599.0 / 80.0) 31736 (599.0 / 99.0) 5630	(9.88, 1.05) (N/A, -0.03, -0.8)	70.1 36.4	0.1774 78.8 85.5	0.0588	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) 1639672 (327.0 / 81.0) 969136	(5.77, 1.00) (0.00, N/A, 0.0)	732.2 603.9	0.5911 119.7 114.6	5.3598	N/A			
6:2FTS	(427.0 / 407.0) 53355600 (427.0 / 81.0) 39783630	(7.50, 1.00) (0.00, N/A, 0.0)	628.9 775.6	0.7456 95.8 115.2	439.7452	N/A			E,
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.: 22L0023-02
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (12)
 Acquired: 2022/12/21 - 21:00

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
PFOSA	(498.0 / 78.0) 5250 (498.0 / 478.0) 617	(10.17, 1.00) (0.01, N/A, 0.6)	31.4 67.2	0.1176 564.2 501.6	0.0105	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			

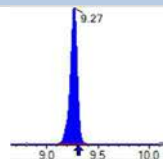
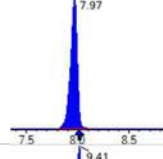
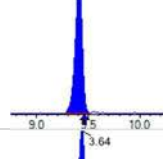
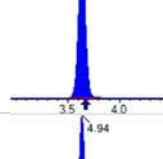
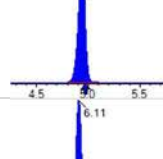
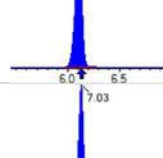
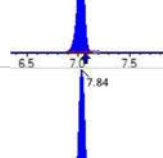
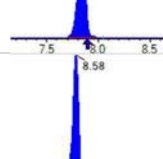
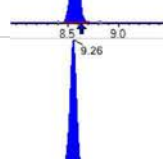
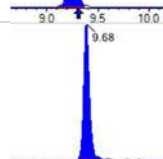
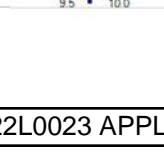


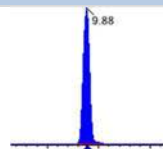
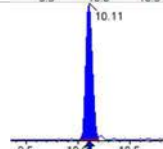
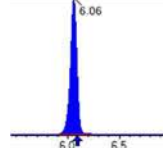
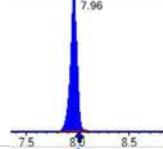
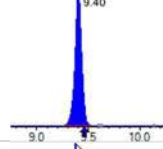
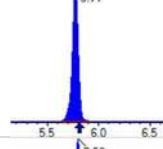
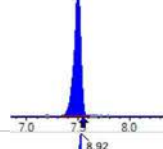
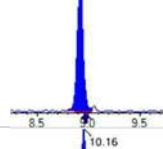
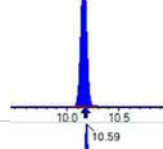
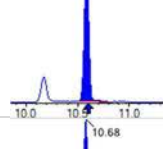
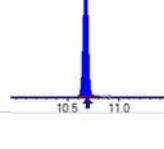
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-02
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (12)
 Acquired: 2022/12/21 - 21:00

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) 1873 (241.0 / 117.0) 2373	(4.43, 0.90) (N/A, -0.02, 0.2)	90.6 34.6	1.2666 75.7 73.6	0.3330	N/A			
5:3FTCA	(341.0 / 236.7) 383699 (341.0 / 217.0) 619279	(6.74, 1.10) (N/A, -0.03, 0.0)	700.1 600.4	1.6140 110.3 104.2	8.2924	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 162817	(3.64, N/A) (N/A, -0.03, N/A)	588.7	N/A	1.1697 [1.0000]	117.0% { 99.9% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 281770	(6.11, N/A) (N/A, -0.03, N/A)	627.0	N/A	1.2202 [1.0000]	122.0% { 126.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 188451	(7.84, N/A) (N/A, -0.05, N/A)	465.3	N/A	0.8572 [1.0000]	85.7% { 77.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 164329	(8.58, N/A) (N/A, -0.05, N/A)	266.4	N/A	0.8874 [1.0000]	88.7% { 91.1% }			

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_IIS	(515.1 / 470.1) 160528	(9.27, N/A) (N/A, -0.05, N/A)	394.3	N/A	0.8686 [1.0000]	86.9% { 80.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 382595	(7.97, N/A) (N/A, -0.05, N/A)	864.3	N/A	0.9477 [1.0000]	94.8% { 92.5% }			
13C4_PFOS_IIS	(502.8 / 79.9) 228022	(9.41, N/A) (N/A, -0.04, N/A)	416.7	N/A	0.7144 [1.0000]	71.4% { 67.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1264068	(3.64, N/A) (N/A, -0.03, N/A)	873.6	N/A	7.5433 [8.0000]	94.3% { 101.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 742406	(4.94, N/A) (N/A, -0.04, N/A)	688.0	N/A	3.7868 [4.0000]	94.7% { 111.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 609826	(6.11, N/A) (N/A, -0.03, N/A)	597.6	N/A	1.8807 [2.0000]	94.0% { 115.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 484011	(7.03, N/A) (N/A, -0.04, N/A)	566.4	N/A	1.7111 [2.0000]	85.6% { 104.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 378415	(7.84, N/A) (N/A, -0.05, N/A)	687.0	N/A	1.8310 [2.0000]	91.6% { 74.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 176574	(8.58, N/A) (N/A, -0.05, N/A)	489.4	N/A	0.9772 [1.0000]	97.7% { 96.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 194034	(9.26, N/A) (N/A, -0.05, N/A)	420.0	N/A	0.8499 [1.0000]	85.0% { 77.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 140578	(9.68, N/A) (N/A, -0.04, N/A)	170.8	N/A	0.4329 [1.0000]	43.3% { 43.7% }			

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) 316295	(9.88, N/A) (N/A, -0.02, N/A)	667.8	N/A	0.9758 [1.0000]	97.6% { 85.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 109168	(10.11, N/A) (N/A, -0.01, N/A)	296.1	N/A	0.5071 [1.0000]	50.7% { 39.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1560820	(6.06, N/A) (N/A, -0.03, N/A)	705.2	N/A	2.4129 [2.0000]	120.6% { 111.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 588403	(7.96, N/A) (N/A, -0.05, N/A)	960.2	N/A	1.7096 [2.0000]	85.5% { 85.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 807880	(9.40, N/A) (N/A, -0.05, N/A)	522.3	N/A	2.0644 [2.0000]	103.2% { 76.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 370083	(5.77, N/A) (N/A, -0.03, N/A)	891.8	N/A	6.7547 [4.0000]	168.9% { 164.2% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 315656	(7.50, N/A) (N/A, -0.05, N/A)	614.1	N/A	4.7853 [4.0000]	119.6% { 109.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 86917	(8.92, N/A) (N/A, -0.04, N/A)	201.7	N/A	1.3163 [4.0000]	32.9% { 38.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1053861	(10.16, N/A) (N/A, -0.02, N/A)	803.9	N/A	2.1304 [2.0000]	106.5% { 74.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 145683	(10.59, N/A) (N/A, -0.02, N/A)	198.4	N/A	1.3488 [2.0000]	67.4% { 43.0% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 127811	(10.68, N/A) (N/A, -0.02, N/A)	925.6	N/A	1.2819 [2.0000]	64.1% { 42.4% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-02
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (12)
 Acquired: 2022/12/21 - 21:00

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) 563266	(9.47, N/A) (N/A, -0.04, N/A)	494.9	N/A	6.0528 [4.0000]	151.3% { 97.0% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 342731	(9.65, N/A) (N/A, -0.03, N/A)	284.8	N/A	4.1785 [4.0000]	104.5% { 75.9% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 331860	(10.55, N/A) (N/A, -0.02, N/A)	1333.9	N/A	21.8826 [20.0000]	109.4% { 70.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 148458	(10.65, N/A) (N/A, -0.01, N/A)	1552.5	N/A	21.5029 [20.0000]	107.5% { 67.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1338478	(6.45, N/A) (N/A, -0.03, N/A)	702.4	N/A	7.7639 [8.0000]	97.0% { 110.1% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-IDW-SOFD01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-02RE1
		File ID:	S2022-12-21B (13)
Sampled:	12/02/22 19:20	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:13
Solids:		Preparation:	PFAS Leachates
		Dilution:	10
Initial/Final:	105.04 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
6:2FTS	9400	76	38	15	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (13)
 Acquired: 2022/12/21 - 21:13

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) 78866	(3.64, 1.00) (0.00, N/A, 0.0)	50.5	N/A 0.0 0.0	0.7680	N/A			
PFPeA	(262.9 / 219.0) 141516 (262.9 / 69.0) 1640	(4.93, 1.00) (0.00, N/A, 0.0)	451.4 55.9	0.0116 103.5 99.9	0.9498	N/A			
PFHxA	(313.0 / 269.0) 530399 (313.0 / 119.0) 47080	(6.09, 1.00) (0.00, N/A, 0.0)	603.9 186.1	0.0888 90.8 95.7	2.2150	N/A			
PFHpA	(363.0 / 319.0) 69272 (363.0 / 169.0) 21365	(7.03, 1.00) (0.00, N/A, -0.2)	201.4 176.7	0.3084 99.0 98.9	0.3306	N/A			
PFOA	(413.0 / 369.0) 39502 (413.0 / 169.0) 12571	(7.85, 1.00) (0.00, N/A, 0.0)	91.6 103.7	0.3182 97.4 96.7	0.1687	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			



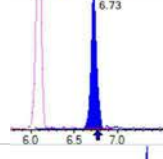
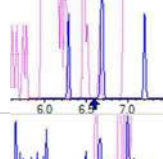
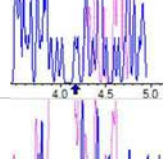
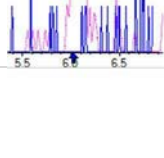
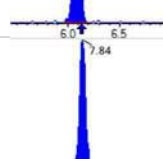
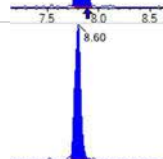
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

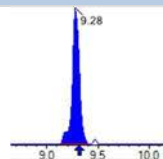
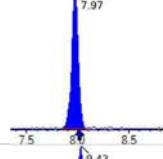
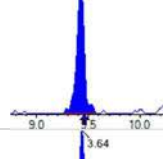
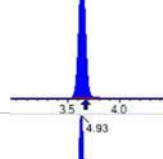
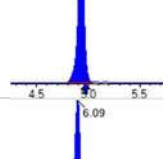
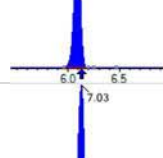
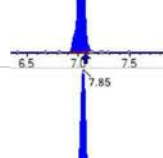
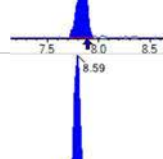
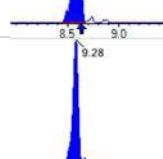
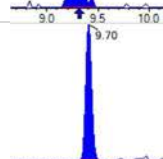

Sample I.D.: 22L0023-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

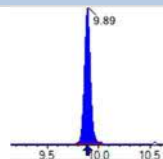
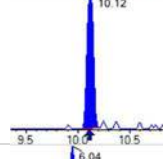
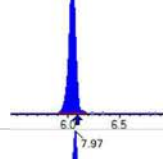
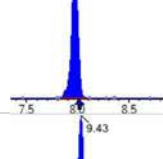
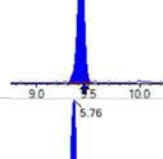
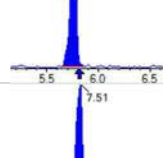
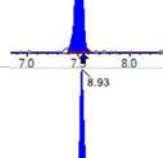
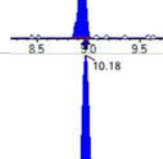
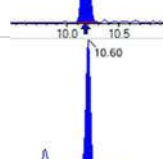
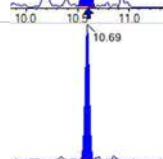

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (13)
 Acquired: 2022/12/21 - 21:13

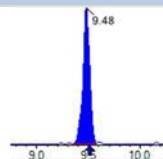
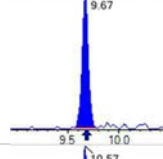
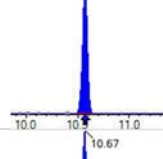
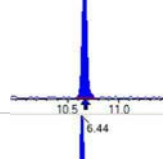
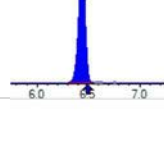
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A 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) 135475 (499.0 / 99.0) 31401	(9.43 , 1.00) (0.00 , N/A , 0.2)	154.0 171.8	0.2318 95.3 108.0	0.2606	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) 129734 (327.0 / 81.0) 67360	(5.76 , 1.00) (0.00 , N/A , -0.2)	495.1 316.9	0.5192 105.1 100.6	0.6763	N/A			
6:2FTS	(427.0 / 407.0) 9304025 (427.0 / 81.0) 6456760	(7.51 , 1.00) (0.00 , N/A , 0.0)	838.3 887.0	0.6940 89.2 107.2	49.1728	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(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			

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) 35860 (341.0 / 217.0) 49210	(6.73, 1.10) (N/A, -0.04, -0.4)	266.6 207.7	1.3723 93.8 88.6	0.8475	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 16571	(3.64, N/A) (N/A, -0.03, N/A)	311.5	N/A	1.1905 [1.0000]	119.1% { 10.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 26009	(6.10, N/A) (N/A, -0.04, N/A)	258.3	N/A	1.1264 [1.0000]	112.6% { 11.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 25218	(7.84, N/A) (N/A, -0.04, N/A)	272.3	N/A	1.1470 [1.0000]	114.7% { 10.3% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 17211	(8.60, N/A) (N/A, -0.03, N/A)	198.9	N/A	0.9294 [1.0000]	92.9% { 9.5% }			

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) 17475	(9.28, N/A) (N/A, -0.03, N/A)	205.4	N/A	0.9456 [1.0000]	94.6% { 8.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 41943	(7.97, N/A) (N/A, -0.04, N/A)	277.4	N/A	1.0389 [1.0000]	103.9% { 10.1% }			
13C4_PFOS_IIS	(502.8 / 79.9) 32501	(9.43, N/A) (N/A, -0.03, N/A)	99.0	N/A	1.0183 [1.0000]	101.8% { 9.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 125924	(3.64, N/A) (N/A, -0.03, N/A)	860.5	N/A	0.7383 [0.8000]	92.3% { 10.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 67860	(4.93, N/A) (N/A, -0.04, N/A)	512.9	N/A	0.3750 [0.4000]	93.7% { 10.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 55765	(6.09, N/A) (N/A, -0.04, N/A)	424.2	N/A	0.1863 [0.2000]	93.2% { 10.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 45971	(7.03, N/A) (N/A, -0.04, N/A)	325.8	N/A	0.1761 [0.2000]	88.0% { 9.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 47626	(7.85, N/A) (N/A, -0.03, N/A)	336.5	N/A	0.1722 [0.2000]	86.1% { 9.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 21569	(8.59, N/A) (N/A, -0.04, N/A)	158.9	N/A	0.1140 [0.1000]	114.0% { 11.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 25811	(9.28, N/A) (N/A, -0.03, N/A)	108.0	N/A	0.1039 [0.1000]	103.9% { 10.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 29137	(9.70, N/A) (N/A, -0.02, N/A)	125.1	N/A	0.0824 [0.1000]	82.4% { 9.1% }			

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) 31413	(9.89, N/A) (N/A, -0.01, N/A)	418.7	N/A	0.0890 [0.1000]	89.0% {8.5%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 19790	(10.12, N/A) (N/A, 0.00, N/A)	98.0	N/A	0.0845 [0.1000]	84.5% {7.2%}			
13C3_PFBs_EIS	(302.0 / 80.0) 151856	(6.04, N/A) (N/A, -0.05, N/A)	523.1	N/A	0.2141 [0.2000]	107.1% {10.8%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 71993	(7.97, N/A) (N/A, -0.04, N/A)	402.0	N/A	0.1908 [0.2000]	95.4% {10.4%}			
13C8_PFOS_EIS	(507.0 / 80.0) 95793	(9.43, N/A) (N/A, -0.03, N/A)	272.6	N/A	0.1717 [0.2000]	85.9% {9.0%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 23206	(5.76, N/A) (N/A, -0.04, N/A)	217.1	N/A	0.3864 [0.4000]	96.6% {10.3%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 49224	(7.51, N/A) (N/A, -0.03, N/A)	402.4	N/A	0.6807 [0.4000]	170.2% {17.1%}			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 20393	(8.93, N/A) (N/A, -0.03, N/A)	167.4	N/A	0.2817 [0.4000]	70.4% {9.1%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 123719	(10.18, N/A) (N/A, 0.00, N/A)	227.7	N/A	0.1755 [0.2000]	87.7% {8.7%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 15697	(10.60, N/A) (N/A, 0.00, N/A)	84.3	N/A	0.1020 [0.2000]	51.0% {4.6%}			
D5_NEiFOSA_EIS	(531.1 / 169.0) 12837	(10.69, N/A) (N/A, 0.00, N/A)	244.5	N/A	0.0903 [0.2000]	45.2% {4.3%}			

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) 50085	(9.48, N/A) (N/A, -0.02, N/A)	222.8	N/A	0.3776 [0.4000]	94.4% { 8.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 39013	(9.67, N/A) (N/A, -0.01, N/A)	100.4	N/A	0.3337 [0.4000]	83.4% { 8.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 35146	(10.57, N/A) (N/A, 0.00, N/A)	496.5	N/A	1.6259 [2.0000]	81.3% { 7.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 13342	(10.67, N/A) (N/A, 0.00, N/A)	244.8	N/A	1.3558 [2.0000]	67.8% { 6.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 125660	(6.44, N/A) (N/A, -0.05, N/A)	465.4	N/A	0.7896 [0.8000]	98.7% { 10.3% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-IDW-SOFT01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-03
		File ID:	S2022-12-21B (14)
Sampled:	12/02/22 19:30	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:25
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	108.34 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	150	7.4	3.7	0.97	
PFPEA	170	3.7	3.7	0.30	
PFHXA	380	1.8	1.8	0.25	
PFHPA	58	1.8	0.92	0.19	
PFOA	28	1.8	0.92	0.69	
PFNA	3.4	1.8	0.92	0.38	
PFDA	7.0	1.8	0.92	0.46	
PFUnA	4.0	1.8	0.92	0.74	IR2
PFDOA	0.78 J	1.8	0.92	0.51	IR1,
PFTRDA	1.4 U	1.8	1.4	0.92	
PFTEDA	0.92 U	1.8	0.92	0.92	
PFBS	4.2	1.8	0.92	0.17	
PFPEs	0.92 U	1.8	0.92	0.29	
PFHXS	1.7 J	1.8	0.92	0.15	
PFHPS	0.92 U	1.8	0.92	0.24	
PFOS	44	1.8	0.92	0.30	
PFNS	0.92 U	1.8	0.92	0.55	
PFDS	0.92 U	1.8	0.92	0.69	IR1,
PFDOS	0.92 U	1.8	0.92	0.55	
4:2FTS	93	7.4	3.7	1.3	
8:2FTS	3.7 U	7.4	3.7	0.38	
PFOSA	0.92 U	1.8	0.92	0.46	
NMeFOSA	3.7 U	7.4	3.7	2.2	
NEtFOSA	3.7 U	7.4	3.7	1.9	
NMeFOSAA	0.92 U	1.8	0.92	0.51	
NEtFOSAA	0.92 U	1.8	0.92	0.51	
NMeFOSE	5.5 U	7.4	5.5	4.6	
NEtFOSE	5.5 U	7.4	5.5	4.6	
HFPO-DA	1.8 U	3.7	1.8	0.78	
ADONA	1.8 U	3.7	1.8	0.55	

FORM I
ANALYSIS DATA SHEET
ADIT6-IDW-SOFT01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-03
		File ID:	S2022-12-21B (14)
Sampled:	12/02/22 19:30	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:25
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	108.34 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFEEESA	1.8 U	3.7	1.8	0.51	
PFMPA	1.8 U	3.7	1.8	0.25	
PFMBA	1.8 U	3.7	1.8	0.42	
NFDHA	1.8 U	3.7	1.8	1.4	
9CL-PF3ONS	1.8 U	3.7	1.8	0.97	
11CL-PF3OUDS	1.8 U	3.7	1.8	0.97	
3:3FTCA	3.3 J	7.4	3.7	2.6	
5:3FTCA	160	7.4	3.7	2.0	
7:3FTCA	3.7 U	7.4	3.7	2.5	

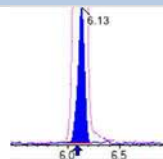
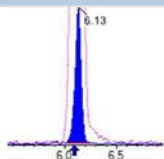
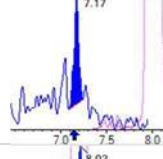
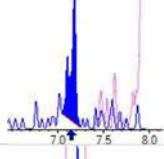
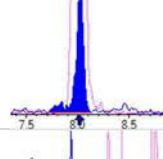
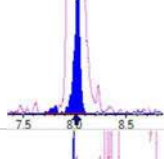
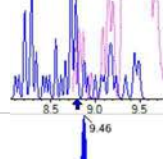
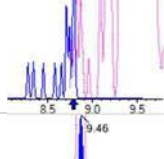
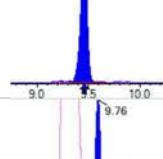
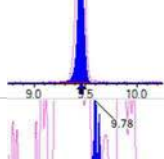
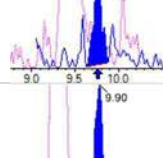
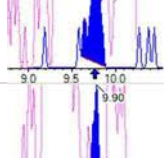
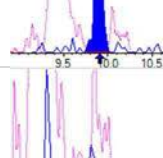
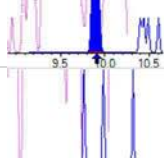
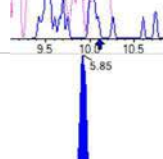
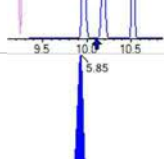
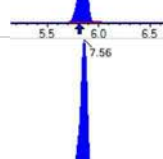
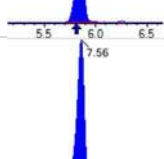
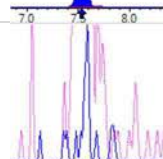
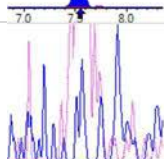
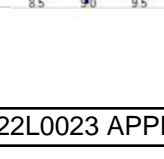
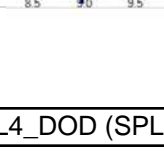


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-03
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (14)
 Acquired: 2022/12/21 - 21:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 784029	(3.69, 1.00) (0.00, N/A, 0.0)	72.6	N/A 0.0 0.0	7.8592	N/A			
PFPeA	(262.9 / 219.0) 1504261 (262.9 / 69.0) 16537	(5.02, 1.00) (0.00, N/A, 0.1)	668.4 316.1	0.0110 98.2 94.8	8.9757	N/A			
PFHxA	(313.0 / 269.0) 5371790 (313.0 / 119.0) 476990	(6.18, 1.00) (0.00, N/A, 0.0)	584.5 573.5	0.0888 90.8 95.8	20.3391	N/A			
PFHpA	(363.0 / 319.0) 709300 (363.0 / 169.0) 203220	(7.09, 1.00) (0.00, N/A, 0.0)	631.0 579.4	0.2865 92.0 91.9	3.1359	N/A			
PFOA	(413.0 / 369.0) 301934 (413.0 / 169.0) 93941	(7.90, 1.00) (0.00, N/A, -0.1)	496.5 478.0	0.3111 95.2 94.6	1.5014	N/A			
PFNA	(463.0 / 419.0) 29439 (463.0 / 169.0) 7605	(8.64, 1.00) (0.00, N/A, 0.0)	112.6 41.4	0.2583 134.0 112.6	0.1863	N/A			
PFDA	(513.0 / 469.0) 81064 (513.0 / 169.0) 5626	(9.32, 1.00) (0.01, N/A, -0.4)	151.1 153.2	0.0694 72.6 64.3	0.3803	N/A			
PFUnA	(563.0 / 519.0) 26754 (563.0 / 169.0) 5535	(9.71, 1.00) (0.01, N/A, 0.2)	70.0 37.4	0.2069 238.2 201.9	0.2186	N/A			IR2,
PFDoA	(613.0 / 569.0) 9839 (613.0 / 169.0) 562	(9.90, 1.00) (0.00, N/A, 1.0)	64.3 97.5	0.0572 41.0 48.7	0.0423	N/A			IR1,
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			

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) 94156 (298.9 / 99.0) 65413	(6.13, 1.00) (0.00, N/A, 0.1)	236.9 236.5	0.6947 112.9 111.2	0.2275	N/A			
PFPeS	(349.0 / 80.0) 8465 (349.0 / 99.0) 2813	(7.17, 0.89) (N/A, 0.04, -0.5)	20.6 20.8	0.3323 93.4 96.9	0.0150	N/A			
PFHxS	(399.0 / 80.0) 44777 (399.0 / 99.0) 14468	(8.02, 1.00) (0.00, N/A, -0.2)	209.4 1660.9	0.3231 96.1 95.1	0.0912	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) 1243394 (499.0 / 99.0) 331583	(9.46, 1.00) (0.00, N/A, 0.0)	279.0 589.8	0.2667 109.7 124.2	2.3844	N/A			
PFNS	(549.0 / 80.0) 11983 (549.0 / 99.0) 3040	(9.76, 1.03) (N/A, 0.00, -1.1)	22.0 17.7	0.2537 103.9 101.6	0.0207	N/A			
PFDS	(599.0 / 80.0) 23464 (599.0 / 99.0) 2519	(9.90, 1.05) (N/A, -0.02, 0.0)	46.1 43.0	0.1074 47.7 51.8	0.0365	N/A			IR1,
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) 1490439 (327.0 / 81.0) 879000	(5.85, 1.00) (0.00, N/A, -0.1)	750.1 470.7	0.5898 119.4 114.3	5.0555	N/A			
6:2FTS	(427.0 / 407.0) 49617356 (427.0 / 81.0) 39842502	(7.56, 1.00) (0.00, N/A, 0.1)	693.8 721.5	0.8030 103.2 124.0	398.1666	N/A			E,
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			

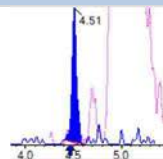
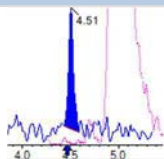
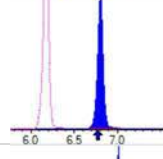
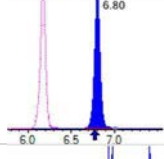
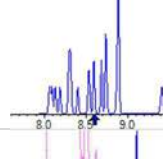
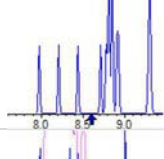
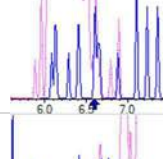
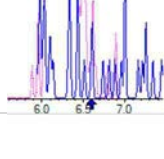
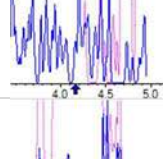
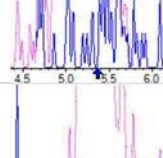
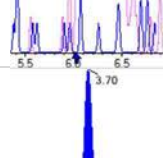
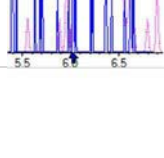
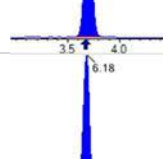
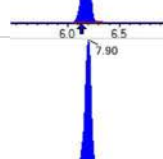
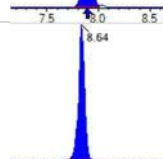



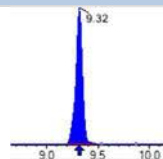
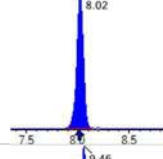
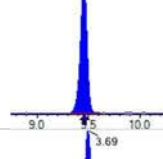
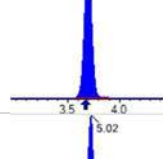
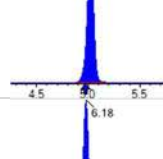
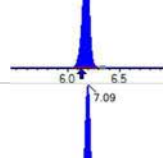
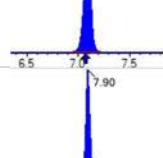
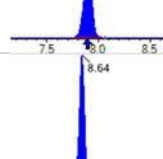
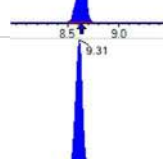
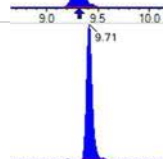

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

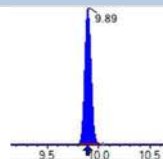
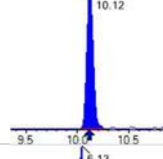
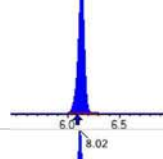
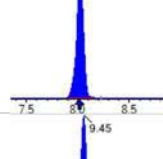
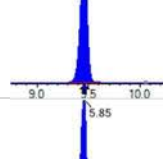
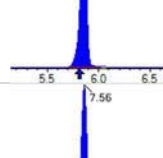
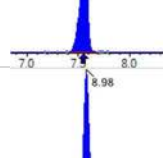
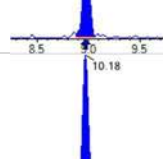
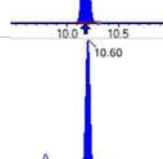
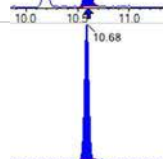

Sample I.D.: 22L0023-03
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

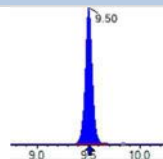
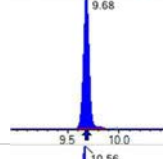
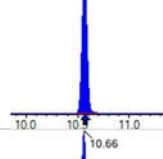
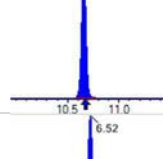
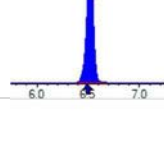
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (14)
 Acquired: 2022/12/21 - 21:25

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) 1043 (241.0 / 117.0) 2237	(4.51, 0.90) (N/A, 0.05, 0.2)	56.4 32.0	2.1447 128.2 124.6	0.1803	N/A			
5:3FTCA	(341.0 / 236.7) 414206 (341.0 / 217.0) 629981	(6.80, 1.10) (N/A, 0.03, 0.1)	541.6 571.6	1.5209 103.9 98.2	8.8756	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 150239	(3.70, N/A) (N/A, 0.03, N/A)	739.7	N/A	1.0794 [1.0000]	107.9% { 92.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 285687	(6.18, N/A) (N/A, 0.04, N/A)	728.6	N/A	1.2372 [1.0000]	123.7% { 127.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 201064	(7.90, N/A) (N/A, 0.01, N/A)	466.6	N/A	0.9146 [1.0000]	91.5% { 82.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 188540	(8.64, N/A) (N/A, 0.01, N/A)	656.9	N/A	1.0181 [1.0000]	101.8% { 104.6% }			

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) 189203	(9.32, N/A) (N/A, 0.01, N/A)	398.3	N/A	1.0238 [1.0000]	102.4% { 94.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 383181	(8.02, N/A) (N/A, 0.01, N/A)	731.5	N/A	0.9492 [1.0000]	94.9% { 92.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 273934	(9.46, N/A) (N/A, 0.00, N/A)	358.1	N/A	0.8582 [1.0000]	85.8% { 81.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1223319	(3.69, N/A) (N/A, 0.03, N/A)	888.1	N/A	7.9113 [8.0000]	98.9% { 97.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 763300	(5.02, N/A) (N/A, 0.05, N/A)	802.8	N/A	3.8400 [4.0000]	96.0% { 115.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 615054	(6.18, N/A) (N/A, 0.04, N/A)	662.8	N/A	1.8708 [2.0000]	93.5% { 116.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 496285	(7.09, N/A) (N/A, 0.02, N/A)	763.1	N/A	1.7304 [2.0000]	86.5% { 106.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 409007	(7.90, N/A) (N/A, 0.01, N/A)	757.1	N/A	1.8549 [2.0000]	92.7% { 80.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 184180	(8.64, N/A) (N/A, 0.01, N/A)	700.2	N/A	0.8884 [1.0000]	88.8% { 100.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 223941	(9.31, N/A) (N/A, 0.00, N/A)	611.1	N/A	0.8322 [1.0000]	83.2% { 89.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 154893	(9.71, N/A) (N/A, -0.01, N/A)	339.1	N/A	0.4047 [1.0000]	40.5% { 48.1% }			

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) 269512	(9.89, N/A) (N/A, 0.00, N/A)	591.9	N/A	0.7055 [1.0000]	70.5% { 73.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 147191	(10.12, N/A) (N/A, 0.00, N/A)	207.6	N/A	0.5801 [1.0000]	58.0% { 53.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1509474	(6.13, N/A) (N/A, 0.04, N/A)	547.3	N/A	2.3299 [2.0000]	116.5% { 107.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 632086	(8.02, N/A) (N/A, 0.01, N/A)	773.5	N/A	1.8337 [2.0000]	91.7% { 91.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 960861	(9.45, N/A) (N/A, 0.00, N/A)	453.7	N/A	2.0438 [2.0000]	102.2% { 90.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 356647	(5.85, N/A) (N/A, 0.05, N/A)	595.8	N/A	6.4995 [4.0000]	162.5% { 158.3% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 324193	(7.56, N/A) (N/A, 0.01, N/A)	592.0	N/A	4.9072 [4.0000]	122.7% { 112.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 92599	(8.98, N/A) (N/A, 0.02, N/A)	188.9	N/A	1.4002 [4.0000]	35.0% { 41.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1091481	(10.18, N/A) (N/A, 0.00, N/A)	831.5	N/A	1.8366 [2.0000]	91.8% { 77.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 129673	(10.60, N/A) (N/A, -0.01, N/A)	233.0	N/A	0.9994 [2.0000]	50.0% { 38.3% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 125169	(10.68, N/A) (N/A, -0.01, N/A)	1160.7	N/A	1.0450 [2.0000]	52.2% { 41.5% }			

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 495980	(9.50, N/A) (N/A, 0.00, N/A)	481.8	N/A	4.4365 [4.0000]	110.9% { 85.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 426625	(9.68, N/A) (N/A, 0.00, N/A)	471.8	N/A	4.3295 [4.0000]	108.2% { 94.4% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 354430	(10.56, N/A) (N/A, -0.01, N/A)	1284.7	N/A	19.4538 [20.0000]	97.3% { 75.6% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 149744	(10.66, N/A) (N/A, -0.01, N/A)	953.8	N/A	18.0540 [20.0000]	90.3% { 68.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1285463	(6.52, N/A) (N/A, 0.04, N/A)	859.7	N/A	7.3542 [8.0000]	91.9% { 105.8% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-IDW-SOFT01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-03RE1
		File ID:	S2022-12-21B (15)
Sampled:	12/02/22 19:30	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:38
Solids:		Preparation:	PFAS Leachates
		Dilution:	10
Initial/Final:	108.34 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
6:2FTS	8800	74	37	14	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (15)
 Acquired: 2022/12/21 - 21:38

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) 80974	(3.66, 1.00) (0.00, N/A, 0.0)	63.2	N/A 0.0 0.0	0.7674	N/A			
PFPeA	(262.9 / 219.0) 144276 (262.9 / 69.0) 1803	(4.96, 1.00) (0.00, N/A, -0.1)	439.1 58.0	0.0125 111.6 107.8	0.9218	N/A			
PFHxA	(313.0 / 269.0) 501510 (313.0 / 119.0) 49145	(6.11, 1.00) (0.00, N/A, 0.1)	620.1 330.1	0.0980 100.2 105.7	1.7390	N/A			
PFHpA	(363.0 / 319.0) 66223 (363.0 / 169.0) 20643	(7.04, 1.00) (0.00, N/A, -0.1)	209.8 228.8	0.3117 100.1 100.0	0.2893	N/A			
PFOA	(413.0 / 369.0) 34179 (413.0 / 169.0) 8980	(7.85, 1.00) (-0.01, N/A, -0.5)	91.6 98.3	0.2627 80.4 79.9	0.1462	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.: 22L0023-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (15)
 Acquired: 2022/12/21 - 21:38

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) 112026 (499.0 / 99.0) 30199	(9.42 , 1.00) (0.01 , N/A , 0.2)	150.6 114.1	0.2696 110.8 125.6	0.2182	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) 127572 (327.0 / 81.0) 71728	(5.78 , 1.00) (0.00 , N/A , 0.0)	703.0 263.3	0.5623 113.8 109.0	0.6612	N/A			
6:2FTS	(427.0 / 407.0) 8724655 (427.0 / 81.0) 5883145	(7.51 , 1.00) (0.00 , N/A , 0.0)	722.0 701.6	0.6743 86.6 104.2	47.5193	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			

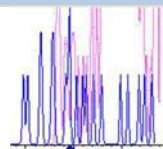
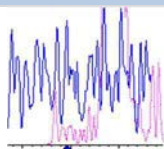
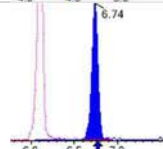
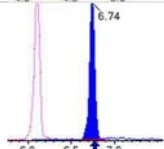
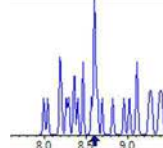
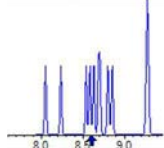
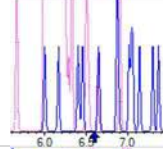
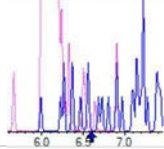
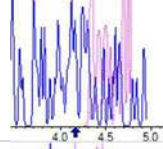
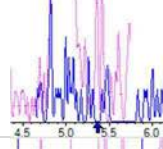
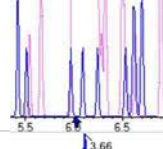
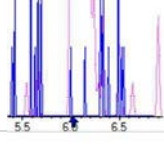
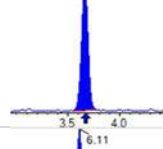
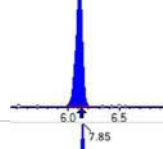
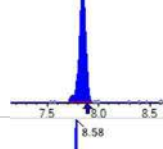
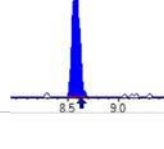


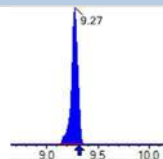
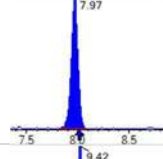
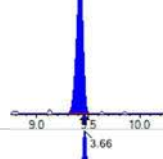
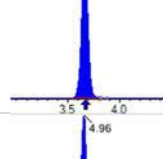
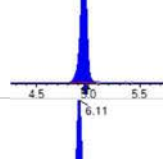
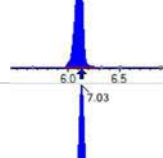
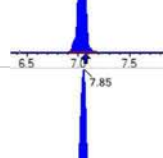
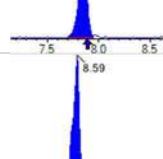
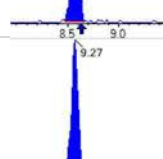
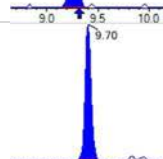

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

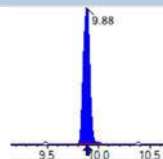
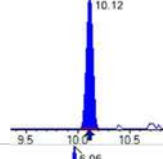
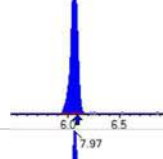
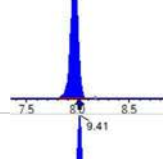
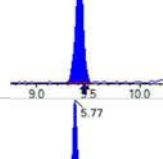
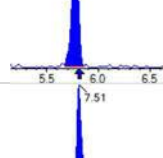
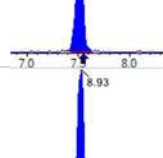
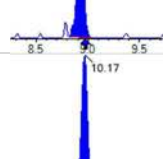
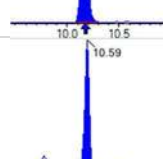
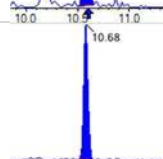

Sample I.D.: 22L0023-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (15)
 Acquired: 2022/12/21 - 21:38

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) 41340 (341.0 / 217.0) 56403	(6.74, 1.10) (N/A, -0.03, -0.1)	305.7 268.1	1.3644 93.2 88.1	0.8112	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 16047	(3.66, N/A) (N/A, 0.00, N/A)	271.0	N/A	1.1529 [1.0000]	115.3% { 9.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 27734	(6.11, N/A) (N/A, -0.02, N/A)	279.5	N/A	1.2010 [1.0000]	120.1% { 12.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 25339	(7.85, N/A) (N/A, -0.04, N/A)	295.5	N/A	1.1526 [1.0000]	115.3% { 10.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 19284	(8.58, N/A) (N/A, -0.05, N/A)	205.6	N/A	1.0413 [1.0000]	104.1% { 10.7% }			

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_IIS	(515.1 / 470.1) 16858	(9.27, N/A) (N/A, -0.04, N/A)	762874.7	N/A	0.9122 [1.0000]	91.2% { 8.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 42012	(7.97, N/A) (N/A, -0.04, N/A)	407.8	N/A	1.0407 [1.0000]	104.1% { 10.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 38505	(9.42, N/A) (N/A, -0.04, N/A)	202.5	N/A	1.2064 [1.0000]	120.6% { 11.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 129386	(3.66, N/A) (N/A, 0.00, N/A)	763.9	N/A	0.7834 [0.8000]	97.9% { 10.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 71283	(4.96, N/A) (N/A, -0.02, N/A)	553.8	N/A	0.3694 [0.4000]	92.3% { 10.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 67161	(6.11, N/A) (N/A, -0.03, N/A)	289.7	N/A	0.2104 [0.2000]	105.2% { 12.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 50228	(7.03, N/A) (N/A, -0.04, N/A)	529.9	N/A	0.1804 [0.2000]	90.2% { 10.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 47540	(7.85, N/A) (N/A, -0.03, N/A)	291.7	N/A	0.1711 [0.2000]	85.5% { 9.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 22421	(8.59, N/A) (N/A, -0.04, N/A)	171.1	N/A	0.1057 [0.1000]	105.7% { 12.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 23973	(9.27, N/A) (N/A, -0.04, N/A)	231.7	N/A	0.1000 [0.1000]	100.0% { 9.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 31791	(9.70, N/A) (N/A, -0.02, N/A)	137.5	N/A	0.0932 [0.1000]	93.2% { 9.9% }			

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) 33305	(9.88, N/A) (N/A, -0.02, N/A)	470.7	N/A	0.0978 [0.1000]	97.8% {9.0%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 18370	(10.12, N/A) (N/A, 0.00, N/A)	191.0	N/A	0.0813 [0.1000]	81.3% {6.6%}			
13C3_PFBs_EIS	(302.0 / 80.0) 152118	(6.06, N/A) (N/A, -0.03, N/A)	542.9	N/A	0.2142 [0.2000]	107.1% {10.8%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 73713	(7.97, N/A) (N/A, -0.05, N/A)	650.8	N/A	0.1950 [0.2000]	97.5% {10.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 94586	(9.41, N/A) (N/A, -0.04, N/A)	210.3	N/A	0.1431 [0.2000]	71.6% {8.9%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 23342	(5.77, N/A) (N/A, -0.03, N/A)	202.7	N/A	0.3880 [0.4000]	97.0% {10.4%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 47765	(7.51, N/A) (N/A, -0.04, N/A)	323.9	N/A	0.6594 [0.4000]	164.9% {16.6%}			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 17018	(8.93, N/A) (N/A, -0.03, N/A)	134.3	N/A	0.2347 [0.4000]	58.7% {7.6%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 136702	(10.17, N/A) (N/A, -0.01, N/A)	427.7	N/A	0.1636 [0.2000]	81.8% {9.7%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 13943	(10.59, N/A) (N/A, -0.01, N/A)	81.7	N/A	0.0764 [0.2000]	38.2% {4.1%}			
D5_NEiFOsa_EIS	(531.1 / 169.0) 11620	(10.68, N/A) (N/A, -0.02, N/A)	169.2	N/A	0.0690 [0.2000]	34.5% {3.9%}			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (15)
 Acquired: 2022/12/21 - 21:38

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) 56952	(9.47, N/A) (N/A, -0.04, N/A)	214.1	N/A	0.3624 [0.4000]	90.6% { 9.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 40607	(9.66, N/A) (N/A, -0.02, N/A)	123.3	N/A	0.2932 [0.4000]	73.3% { 9.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 36219	(10.56, N/A) (N/A, -0.01, N/A)	350.0	N/A	1.4143 [2.0000]	70.7% { 7.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 15712	(10.65, N/A) (N/A, -0.01, N/A)	390.7	N/A	1.3477 [2.0000]	67.4% { 7.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 119389	(6.45, N/A) (N/A, -0.03, N/A)	376.0	N/A	0.7036 [0.8000]	87.9% { 9.8% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-DU02-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-04
		File ID:	S2022-12-21B (16)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:51
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	109.11 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	240	7.3	3.7	0.96	
PFPEA	92	3.7	3.7	0.30	
PFHXA	740	1.8	1.8	0.25	
PFHPA	22	1.8	0.92	0.19	
PFOA	53	1.8	0.92	0.69	
PFNA	0.67 J	1.8	0.92	0.38	
PFDA	6.5	1.8	0.92	0.46	
PFUnA	0.92 U	1.8	0.92	0.73	
PFDOA	0.92 U	1.8	0.92	0.50	
PFTRDA	1.4 U	1.8	1.4	0.92	
PFTEDA	0.92 U	1.8	0.92	0.92	
PFBS	0.23 J	1.8	0.92	0.17	
PFPEs	0.92 U	1.8	0.92	0.29	
PFHXS	1.1 J	1.8	0.92	0.15	
PFHPS	0.92 U	1.8	0.92	0.23	
PFOS	8.9	1.8	0.92	0.29	
PFNS	0.92 U	1.8	0.92	0.55	
PFDS	0.92 U	1.8	0.92	0.69	
PFDOS	0.92 U	1.8	0.92	0.55	
4:2FTS	37	7.3	3.7	1.3	
8:2FTS	3.7 U	7.3	3.7	0.38	
PFOSA	0.92 U	1.8	0.92	0.46	
NMeFOSA	3.7 U	7.3	3.7	2.2	
NEtFOSA	3.7 U	7.3	3.7	1.9	
NMeFOSAA	0.92 U	1.8	0.92	0.50	
NEtFOSAA	0.92 U	1.8	0.92	0.50	
NMeFOSE	5.5 U	7.3	5.5	4.6	
NEtFOSE	5.5 U	7.3	5.5	4.6	
HFPO-DA	1.8 U	3.7	1.8	0.78	
ADONA	1.8 U	3.7	1.8	0.55	

FORM I
ANALYSIS DATA SHEET
ADIT6-DU02-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-04
		File ID:	S2022-12-21B (16)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 21:51
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	109.11 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFEEESA	1.8 U	3.7	1.8	0.50	
PFMPA	1.8 U	3.7	1.8	0.25	
PFMBA	1.8 U	3.7	1.8	0.42	
NFDHA	1.8 U	3.7	1.8	1.4	
9CL-PF3ONS	1.8 U	3.7	1.8	0.96	
11CL-PF3OUDS	1.8 U	3.7	1.8	0.96	
3:3FTCA	3.7 U	7.3	3.7	2.6	
5:3FTCA	47	7.3	3.7	2.0	
7:3FTCA	3.7 U	7.3	3.7	2.5	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (16)
 Acquired: 2022/12/21 - 21:51

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) 1488950	(3.65, 1.00) (0.00, N/A, 0.0)	62.0	N/A 0.0 0.0	13.0300	N/A			
PFPeA	(262.9 / 219.0) 865382 (262.9 / 69.0) 8078	(4.97, 1.00) (0.00, N/A, 0.4)	653.1 139.2	0.0093 83.4 80.5	5.0084	N/A			
PFHxA	(313.0 / 269.0) 9976552 (313.0 / 119.0) 966550	(6.13, 1.00) (0.00, N/A, 0.1)	750.8 543.2	0.0969 99.1 104.5	40.5178	N/A			
PFHpA	(363.0 / 319.0) 256797 (363.0 / 169.0) 78544	(7.05, 1.00) (0.00, N/A, -0.1)	317.0 321.7	0.3059 98.2 98.1	1.2062	N/A			
PFOA	(413.0 / 369.0) 502559 (413.0 / 169.0) 150375	(7.87, 1.00) (0.00, N/A, -0.1)	637.0 491.7	0.2992 91.6 91.0	2.9103	N/A			
PFNA	(463.0 / 419.0) 4466 (463.0 / 169.0) 975	(8.62, 1.00) (0.01, N/A, -0.6)	214.7 21.1	0.2183 113.3 95.1	0.0367	N/A			
PFDA	(513.0 / 469.0) 66466 (513.0 / 169.0) 6843	(9.29, 1.00) (0.00, N/A, -0.7)	156.9 40.4	0.1030 107.7 95.4	0.3542	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.: 22L0023-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (16)
 Acquired: 2022/12/21 - 21:51

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) 5726 (298.9 / 99.0) 4550	(6.08 , 1.00) (0.00 , N/A , 0.2)	20.5 29.6	0.7946 129.1 127.2	0.0127	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) 27694 (399.0 / 99.0) 7944	(7.99 , 1.00) (0.00 , N/A , -0.2)	113.1 47.9	0.2868 85.3 84.4	0.0587	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) 175321 (499.0 / 99.0) 37516	(9.44 , 1.00) (0.00 , N/A , -0.1)	169.6 192.3	0.2140 88.0 99.7	0.4875	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) 627061 (327.0 / 81.0) 392171	(5.79 , 1.00) (-0.01 , N/A , 0.0)	717.7 450.1	0.6254 126.6 121.2	1.9965	N/A			
6:2FTS	(427.0 / 407.0) 37886006 (427.0 / 81.0) 28621750	(7.52 , 1.00) (0.00 , N/A , 0.2)	651.8 681.7	0.7555 97.1 116.7	362.6368	N/A			E,
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.: 22L0023-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (16)
 Acquired: 2022/12/21 - 21:51

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			

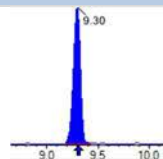
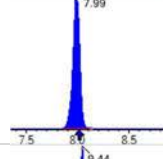
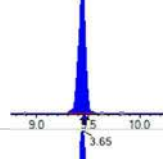
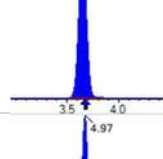
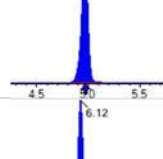
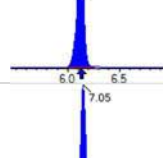
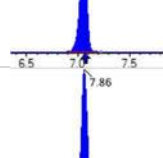
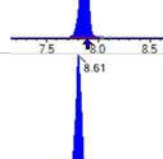
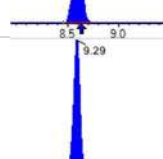
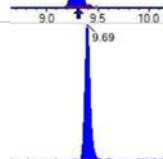



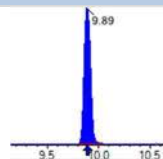
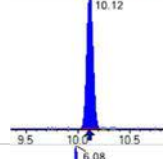
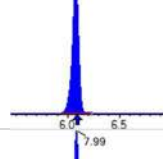
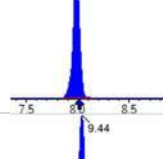
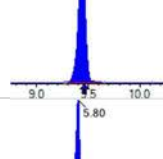
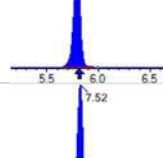
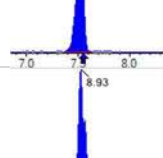
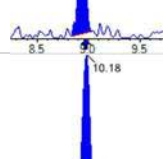
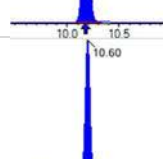
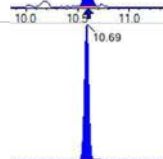

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

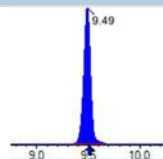
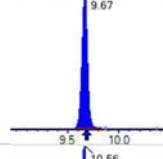
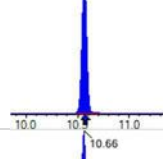
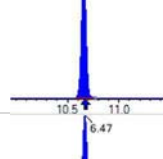
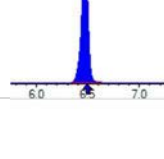
Sample I.D.: 22L0023-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (16)
 Acquired: 2022/12/21 - 21:51

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) 112140 (341.0 / 217.0) 187753	(6.76, 1.10) (N/A, -0.01, 0.0)	353.2 356.2	1.6743 114.4 108.1	2.5775	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 185067	(3.65, N/A) (N/A, -0.02, N/A)	604.3	N/A	1.3296 [1.0000]	133.0% { 113.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 307424	(6.13, N/A) (N/A, -0.01, N/A)	494.9	N/A	1.3313 [1.0000]	133.1% { 137.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 185045	(7.86, N/A) (N/A, -0.02, N/A)	546.0	N/A	0.8417 [1.0000]	84.2% { 75.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 139380	(8.61, N/A) (N/A, -0.02, N/A)	497.3	N/A	0.7527 [1.0000]	75.3% { 77.3% }			

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) 160804	(9.30, N/A) (N/A, -0.02, N/A)	293.1	N/A	0.8701 [1.0000]	87.0% { 80.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 381939	(7.99, N/A) (N/A, -0.03, N/A)	722.4	N/A	0.9461 [1.0000]	94.6% { 92.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 189744	(9.44, N/A) (N/A, -0.01, N/A)	368.2	N/A	0.5945 [1.0000]	59.4% { 56.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1401268	(3.65, N/A) (N/A, -0.02, N/A)	819.1	N/A	7.3567 [8.0000]	92.0% { 111.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 786947	(4.97, N/A) (N/A, -0.01, N/A)	801.2	N/A	3.6790 [4.0000]	92.0% { 118.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 573404	(6.12, N/A) (N/A, -0.01, N/A)	625.3	N/A	1.6208 [2.0000]	81.0% { 108.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 467140	(7.05, N/A) (N/A, -0.02, N/A)	649.2	N/A	1.5136 [2.0000]	75.7% { 100.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 351201	(7.86, N/A) (N/A, -0.02, N/A)	475.9	N/A	1.7306 [2.0000]	86.5% { 68.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 141993	(8.61, N/A) (N/A, -0.02, N/A)	609.2	N/A	0.9264 [1.0000]	92.6% { 77.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 197120	(9.29, N/A) (N/A, -0.02, N/A)	622.9	N/A	0.8619 [1.0000]	86.2% { 78.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 74145	(9.69, N/A) (N/A, -0.03, N/A)	251.2	N/A	0.2279 [1.0000]	22.8% { 23.0% }			

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) 259326	(9.89, N/A) (N/A, -0.01, N/A)	659.5	N/A	0.7987 [1.0000]	79.9% { 70.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 117905	(10.12, N/A) (N/A, 0.00, N/A)	372.0	N/A	0.5468 [1.0000]	54.7% { 42.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1649708	(6.08, N/A) (N/A, -0.01, N/A)	666.2	N/A	2.5547 [2.0000]	127.7% { 117.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 606995	(7.99, N/A) (N/A, -0.03, N/A)	1192.5	N/A	1.7666 [2.0000]	88.3% { 87.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 662662	(9.44, N/A) (N/A, -0.02, N/A)	368.9	N/A	2.0349 [2.0000]	101.7% { 62.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 379962	(5.80, N/A) (N/A, 0.00, N/A)	596.9	N/A	6.9469 [4.0000]	173.7% { 168.6% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 271795	(7.52, N/A) (N/A, -0.02, N/A)	538.3	N/A	4.1275 [4.0000]	103.2% { 94.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 23307	(8.93, N/A) (N/A, -0.03, N/A)	50.7	N/A	0.3536 [4.0000]	8.8% { 10.3% }			S1,
13C8_PFOsa_EIS	(506.0 / 78.0) 460753	(10.18, N/A) (N/A, 0.00, N/A)	601.1	N/A	1.1193 [2.0000]	56.0% { 32.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 116712	(10.60, N/A) (N/A, -0.01, N/A)	275.3	N/A	1.2986 [2.0000]	64.9% { 34.4% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 118490	(10.69, N/A) (N/A, -0.01, N/A)	725.7	N/A	1.4282 [2.0000]	71.4% { 39.3% }			

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) 607123	(9.49, N/A) (N/A, -0.01, N/A)	570.4	N/A	7.8403 [4.0000]	196.0% { 104.5% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 338776	(9.67, N/A) (N/A, -0.02, N/A)	374.3	N/A	4.9635 [4.0000]	124.1% { 75.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 340284	(10.56, N/A) (N/A, -0.01, N/A)	787.6	N/A	26.9647 [20.0000]	134.8% { 72.6% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 136025	(10.66, N/A) (N/A, -0.01, N/A)	851.3	N/A	23.6767 [20.0000]	118.4% { 62.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1281815	(6.47, N/A) (N/A, -0.01, N/A)	769.6	N/A	6.8148 [8.0000]	85.2% { 105.5% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-DU02-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-04RE1
		File ID:	S2022-12-21B (17)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:03
Solids:		Preparation:	PFAS Leachates
		Dilution:	10
Initial/Final:	109.11 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
6:2FTS	6500	73	37	14	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-04RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (17)
 Acquired: 2022/12/21 - 22:03

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) 143685	(3.70, 1.00) (0.00, N/A, 0.0)	66.9	N/A 0.0 0.0	1.2872	N/A			
PFPeA	(262.9 / 219.0) 83334 (262.9 / 69.0) 932	(5.00, 1.00) (0.00, N/A, 0.6)	315.0 30.2	0.0112 100.0 96.5	0.5147	N/A			
PFHxA	(313.0 / 269.0) 1059909 (313.0 / 119.0) 103553	(6.15, 1.00) (0.00, N/A, 0.1)	584.9 373.0	0.0977 99.9 105.4	4.0246	N/A			
PFHpA	(363.0 / 319.0) 32209 (363.0 / 169.0) 8400	(7.07, 1.00) (0.00, N/A, 0.2)	121.0 90.0	0.2608 83.7 83.6	0.1485	N/A			
PFOA	(413.0 / 369.0) 64400 (413.0 / 169.0) 24755	(7.89, 1.00) (0.00, N/A, 0.1)	146.8 202.9	0.3844 117.6 116.8	0.2738	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.: 22L0023-04RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (17)
 Acquired: 2022/12/21 - 22:03

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) 7271367 (427.0 / 81.0) 5336350	(7.55 , 1.00) (0.00 , N/A , 0.3)	631.2 728.8	0.7339 94.3 113.4	35.3898	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			

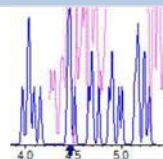
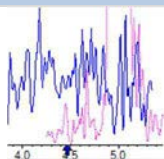
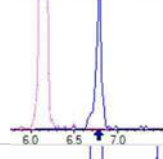
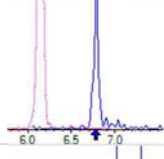
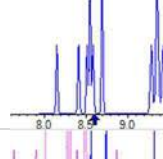
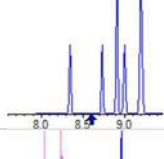
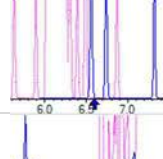
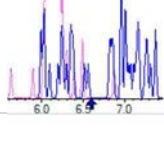
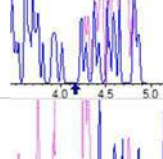
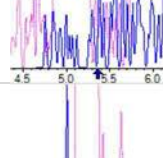
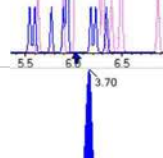
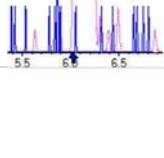
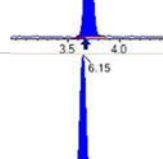
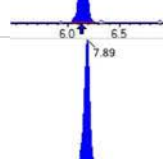
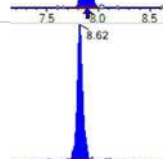



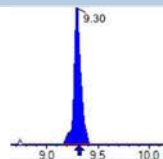
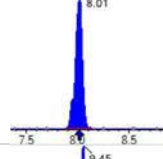
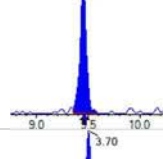
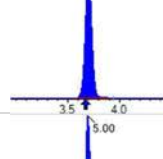
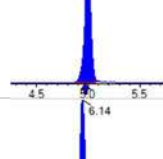
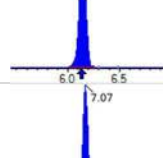
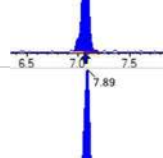
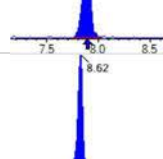
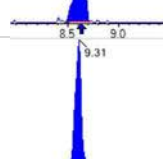
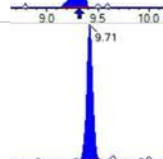

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

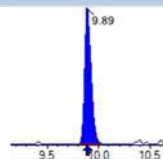
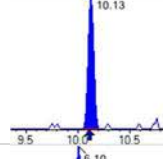
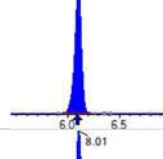
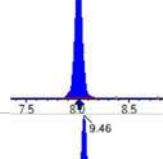
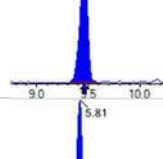
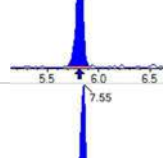
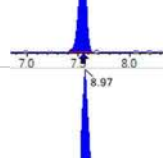
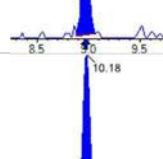
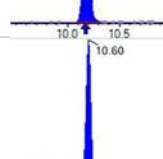
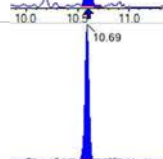

Sample I.D.: 22L0023-04RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

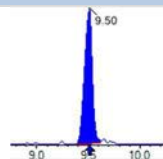
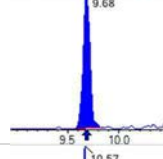
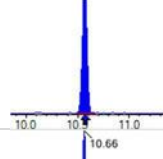
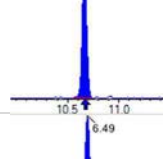
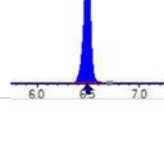
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (17)
 Acquired: 2022/12/21 - 22:03

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	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 18260	(3.70, N/A) (N/A, 0.04, N/A)	331.2	N/A	1.3119 [1.0000]	131.2% { 11.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 29379	(6.15, N/A) (N/A, 0.01, N/A)	269.7	N/A	1.2723 [1.0000]	127.2% { 13.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 23720	(7.89, N/A) (N/A, 0.00, N/A)	327.4	N/A	1.0789 [1.0000]	107.9% { 9.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 25936	(8.62, N/A) (N/A, -0.01, N/A)	192.2	N/A	1.4006 [1.0000]	140.1% { 14.4% }			

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) 17674	(9.30, N/A) (N/A, -0.02, N/A)	313.3	N/A	0.9563 [1.0000]	95.6% { 8.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 48343	(8.01, N/A) (N/A, 0.00, N/A)	419.0	N/A	1.1975 [1.0000]	119.7% { 11.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 34425	(9.45, N/A) (N/A, 0.00, N/A)	90.9	N/A	1.0785 [1.0000]	107.9% { 10.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 136886	(3.70, N/A) (N/A, 0.03, N/A)	903.4	N/A	0.7284 [0.8000]	91.0% { 10.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 73746	(5.00, N/A) (N/A, 0.02, N/A)	501.6	N/A	0.3608 [0.4000]	90.2% { 11.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 61330	(6.14, N/A) (N/A, 0.01, N/A)	512.6	N/A	0.1814 [0.2000]	90.7% { 11.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 47592	(7.07, N/A) (N/A, 0.00, N/A)	286.2	N/A	0.1614 [0.2000]	80.7% { 10.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 47836	(7.89, N/A) (N/A, 0.00, N/A)	312.9	N/A	0.1839 [0.2000]	91.9% { 9.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 23998	(8.62, N/A) (N/A, -0.01, N/A)	175.4	N/A	0.0841 [0.1000]	84.1% { 13.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 21387	(9.31, N/A) (N/A, 0.00, N/A)	147.5	N/A	0.0851 [0.1000]	85.1% { 8.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 29539	(9.71, N/A) (N/A, 0.00, N/A)	154.4	N/A	0.0826 [0.1000]	82.6% { 9.2% }			

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_EIS	(615.0 / 570.0) 34185	(9.89, N/A) (N/A, -0.01, N/A)	147.4	N/A	0.0958 [0.1000]	95.8% {9.3%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 12944	(10.13, N/A) (N/A, 0.01, N/A)	101.5	N/A	0.0546 [0.1000]	54.6% {4.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 163589	(6.10, N/A) (N/A, 0.01, N/A)	431.4	N/A	0.2001 [0.2000]	100.1% {11.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 77896	(8.01, N/A) (N/A, -0.01, N/A)	513.2	N/A	0.1791 [0.2000]	89.6% {11.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 106312	(9.46, N/A) (N/A, 0.00, N/A)	230.8	N/A	0.1799 [0.2000]	90.0% {10.0%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 28470	(5.81, N/A) (N/A, 0.01, N/A)	196.2	N/A	0.4112 [0.4000]	102.8% {12.6%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 53453	(7.55, N/A) (N/A, 0.00, N/A)	376.7	N/A	0.6413 [0.4000]	160.3% {18.6%}			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 16282	(8.97, N/A) (N/A, 0.00, N/A)	81.3	N/A	0.1951 [0.4000]	48.8% {7.2%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 104689	(10.18, N/A) (N/A, 0.00, N/A)	285.1	N/A	0.1402 [0.2000]	70.1% {7.4%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 15294	(10.60, N/A) (N/A, 0.00, N/A)	136.3	N/A	0.0938 [0.2000]	46.9% {4.5%}			
D5_NEiFOsa_EIS	(531.1 / 169.0) 14499	(10.69, N/A) (N/A, 0.00, N/A)	271.0	N/A	0.0963 [0.2000]	48.2% {4.8%}			

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) 56549	(9.50, N/A) (N/A, 0.00, N/A)	182.1	N/A	0.4025 [0.4000]	100.6% { 9.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 48396	(9.68, N/A) (N/A, 0.00, N/A)	124.4	N/A	0.3908 [0.4000]	97.7% { 10.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 36980	(10.57, N/A) (N/A, 0.00, N/A)	494.3	N/A	1.6152 [2.0000]	80.8% { 7.9% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 16096	(10.66, N/A) (N/A, 0.00, N/A)	439.1	N/A	1.5442 [2.0000]	77.2% { 7.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 136468	(6.49, N/A) (N/A, 0.01, N/A)	477.2	N/A	0.7592 [0.8000]	94.9% { 11.2% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-DU02-SOFD01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-05
		File ID:	S2022-12-21B (18)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:16
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	107.57 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	320	7.4	3.7	0.98	
PFPEA	120	3.7	3.7	0.30	
PFHPA	30	1.9	0.93	0.19	
PFOA	67	1.9	0.93	0.70	
PFNA	0.93 U	1.9	0.93	0.38	
PFDA	8.5	1.9	0.93	0.46	
PFUnA	0.93 U	1.9	0.93	0.74	
PFDOA	0.93 U	1.9	0.93	0.51	
PFTRDA	1.4 U	1.9	1.4	0.93	
PFTEDA	0.93 U	1.9	0.93	0.93	
PFBS	0.27 J	1.9	0.93	0.17	
PFPEs	0.93 U	1.9	0.93	0.29	
PFHXS	1.4 J	1.9	0.93	0.15	
PFHPS	0.93 U	1.9	0.93	0.24	
PFOS	7.7	1.9	0.93	0.30	
PFNS	0.93 U	1.9	0.93	0.56	
PFDS	0.93 U	1.9	0.93	0.70	
PFDOS	0.93 U	1.9	0.93	0.56	
4:2FTS	56	7.4	3.7	1.3	
8:2FTS	3.7 U	7.4	3.7	0.38	
PFOSA	0.93 U	1.9	0.93	0.46	
NMeFOSA	3.7 U	7.4	3.7	2.2	
NEtFOSA	3.7 U	7.4	3.7	1.9	
NMeFOSAA	0.93 U	1.9	0.93	0.51	
NEtFOSAA	0.93 U	1.9	0.93	0.51	
NMeFOSE	5.6 U	7.4	5.6	4.6	
NEtFOSE	5.6 U	7.4	5.6	4.6	
HFPO-DA	1.9 U	3.7	1.9	0.79	
ADONA	1.9 U	3.7	1.9	0.56	
PFEESA	1.9 U	3.7	1.9	0.51	

FORM I
ANALYSIS DATA SHEET
ADIT6-DU02-SOFD01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-05
		File ID:	S2022-12-21B (18)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:16
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	107.57 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFMPA	1.9 U	3.7	1.9	0.25	
PFMBA	1.9 U	3.7	1.9	0.42	
NFDHA	1.9 U	3.7	1.9	1.4	
9CL-PF3ONS	1.9 U	3.7	1.9	0.98	
11CL-PF3OUDS	1.9 U	3.7	1.9	0.98	
3:3FTCA	3.7 U	7.4	3.7	2.6	
5:3FTCA	96	7.4	3.7	2.0	
7:3FTCA	3.7 U	7.4	3.7	2.6	

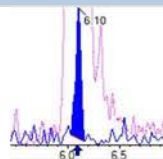
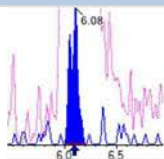
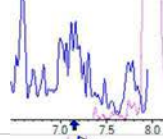
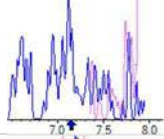
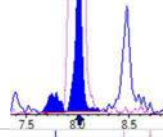
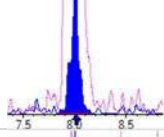
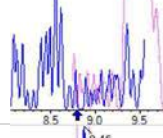
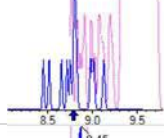
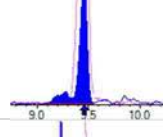
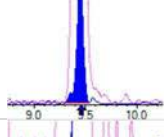
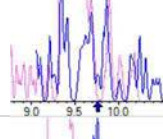
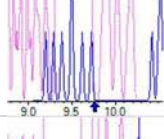
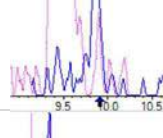
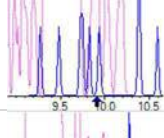
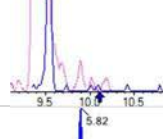
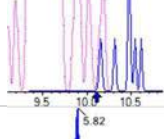
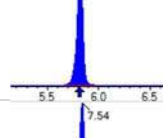
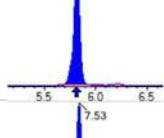
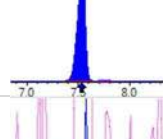
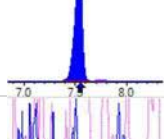
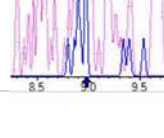
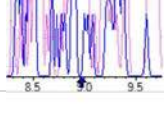


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (18)
 Acquired: 2022/12/21 - 22:16

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
PFBA	(212.9 / 169.0) 2010317	(3.66, 1.00) (0.00, N/A, 0.0)	65.2	N/A 0.0 0.0	17.4316	N/A			
PFPeA	(262.9 / 219.0) 1186564 (262.9 / 69.0) 13568	(4.99, 1.00) (0.00, N/A, 0.0)	709.1 212.3	0.0114 102.2 98.6	6.4837	N/A			
PFHxA	(313.0 / 269.0) 12983862 (313.0 / 119.0) 1201443	(6.15, 1.00) (0.00, N/A, 0.0)	719.2 688.3	0.0925 94.6 99.8	52.9650	N/A			E,
PFHpA	(363.0 / 319.0) 339725 (363.0 / 169.0) 93203	(7.08, 1.00) (0.00, N/A, 0.1)	374.7 379.7	0.2743 88.1 88.0	1.6306	N/A			
PFOA	(413.0 / 369.0) 547480 (413.0 / 169.0) 190474	(7.88, 1.00) (0.00, N/A, 0.0)	561.1 473.4	0.3479 106.5 105.8	3.5830	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) 76024 (513.0 / 169.0) 8999	(9.32, 1.00) (0.01, N/A, 0.5)	254.1 40.8	0.1184 123.8 109.7	0.4578	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			

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) 6458 (298.9 / 99.0) 3693	(6.10, 1.00) (0.00, N/A, 1.2)	35.6 29.8	0.5719 92.9 91.5	0.0148	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) 34900 (399.0 / 99.0) 8880	(8.01, 1.00) (0.00, N/A, 0.3)	120.3 225.5	0.2545 75.7 74.9	0.0754	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) 145163 (499.0 / 99.0) 36992	(9.46, 1.00) (0.00, N/A, 0.4)	219.4 159.1	0.2548 104.8 118.7	0.4120	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) 942272 (327.0 / 81.0) 544752	(5.82, 1.00) (0.00, N/A, 0.1)	724.6 494.2	0.5781 117.0 112.1	2.9920	N/A			
6:2FTS	(427.0 / 407.0) 39830657 (427.0 / 81.0) 28584310	(7.54, 1.00) (0.00, N/A, 0.0)	840.3 711.7	0.7176 92.2 110.8	466.8794	N/A			E,
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			

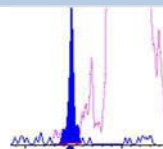
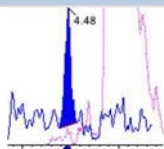
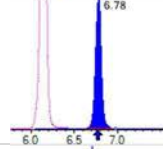
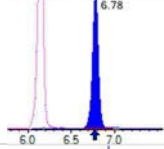
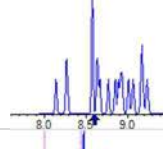
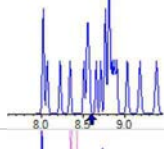
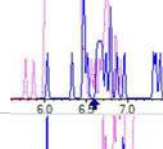
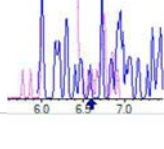
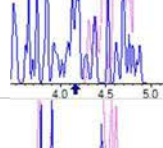
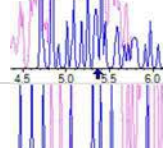
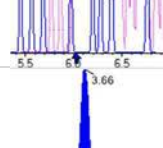
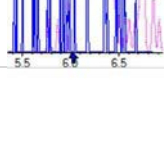
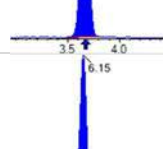
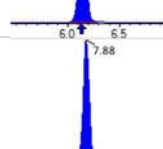
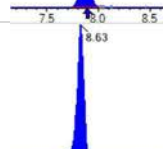



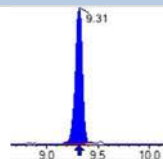
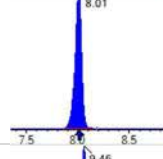
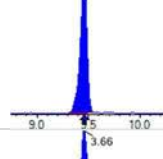
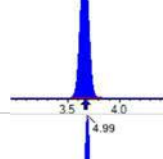
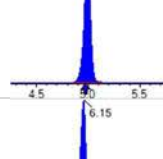
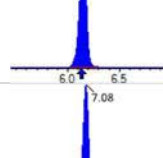
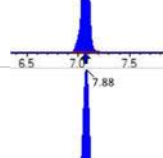
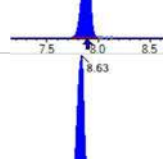
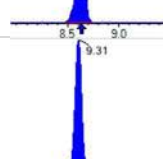
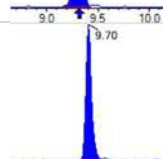

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

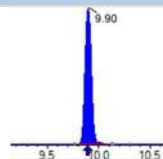
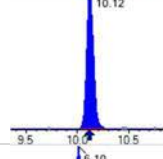
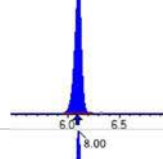
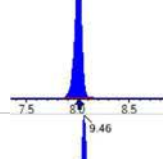
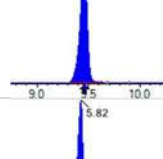
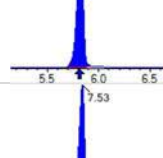
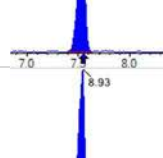
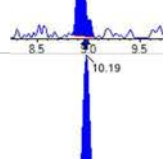
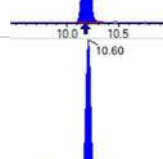
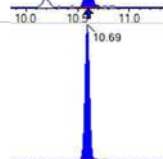

Sample I.D.: 22L0023-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (18)
 Acquired: 2022/12/21 - 22:16

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) 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) 717 (241.0 / 117.0) 1471	(4.48, 0.90) (N/A, 0.02, 0.3)	55.8 21.9	2.0512 122.6 119.1	0.1136	N/A			
5:3FTCA	(341.0 / 236.7) 224700 (341.0 / 217.0) 342216	(6.78, 1.10) (N/A, 0.01, -0.1)	645.7 562.6	1.5230 104.0 98.3	5.1875	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 179490	(3.66, N/A) (N/A, 0.00, N/A)	653.4	N/A	1.2895 [1.0000]	129.0% { 110.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 277291	(6.15, N/A) (N/A, 0.01, N/A)	567.1	N/A	1.2008 [1.0000]	120.1% { 124.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 157507	(7.88, N/A) (N/A, -0.01, N/A)	388.6	N/A	0.7164 [1.0000]	71.6% { 64.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 123245	(8.63, N/A) (N/A, 0.00, N/A)	523.6	N/A	0.6655 [1.0000]	66.6% { 68.4% }			

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) 166231	(9.31, N/A) (N/A, 0.00, N/A)	246.9	N/A	0.8995 [1.0000]	89.9% { 83.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 368702	(8.01, N/A) (N/A, -0.01, N/A)	644.6	N/A	0.9133 [1.0000]	91.3% { 89.1% }			
13C4_PFOS_IIS	(502.8 / 79.9) 197547	(9.46, N/A) (N/A, 0.00, N/A)	409.7	N/A	0.6189 [1.0000]	61.9% { 58.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1414204	(3.66, N/A) (N/A, -0.01, N/A)	886.6	N/A	7.6553 [8.0000]	95.7% { 112.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 833511	(4.99, N/A) (N/A, 0.02, N/A)	850.6	N/A	4.3201 [4.0000]	108.0% { 125.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 570875	(6.15, N/A) (N/A, 0.02, N/A)	734.7	N/A	1.7890 [2.0000]	89.5% { 108.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 457136	(7.08, N/A) (N/A, 0.01, N/A)	960.6	N/A	1.6422 [2.0000]	82.1% { 98.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 310761	(7.88, N/A) (N/A, -0.01, N/A)	501.6	N/A	1.7991 [2.0000]	90.0% { 60.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 111206	(8.63, N/A) (N/A, 0.00, N/A)	502.4	N/A	0.8206 [1.0000]	82.1% { 60.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 174460	(9.31, N/A) (N/A, 0.00, N/A)	303.9	N/A	0.7379 [1.0000]	73.8% { 69.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 90037	(9.70, N/A) (N/A, -0.02, N/A)	294.4	N/A	0.2677 [1.0000]	26.8% { 28.0% }			

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) 244298	(9.90, N/A) (N/A, 0.00, N/A)	420.6	N/A	0.7278 [1.0000]	72.8% { 66.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 99805	(10.12, N/A) (N/A, 0.00, N/A)	340.5	N/A	0.4477 [1.0000]	44.8% { 36.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1596539	(6.10, N/A) (N/A, 0.01, N/A)	616.9	N/A	2.5611 [2.0000]	128.1% { 113.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 596230	(8.00, N/A) (N/A, -0.01, N/A)	797.1	N/A	1.7976 [2.0000]	89.9% { 86.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 649216	(9.46, N/A) (N/A, 0.00, N/A)	392.9	N/A	1.9149 [2.0000]	95.7% { 61.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 380985	(5.82, N/A) (N/A, 0.02, N/A)	587.4	N/A	7.2157 [4.0000]	180.4% { 169.0% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 221946	(7.53, N/A) (N/A, -0.01, N/A)	480.2	N/A	3.4915 [4.0000]	87.3% { 77.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 27840	(8.93, N/A) (N/A, -0.03, N/A)	52.3	N/A	0.4375 [4.0000]	10.9% { 12.4% }			S1,
13C8_PFOsa_EIS	(506.0 / 78.0) 429314	(10.19, N/A) (N/A, 0.01, N/A)	485.3	N/A	1.0018 [2.0000]	50.1% { 30.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 117810	(10.60, N/A) (N/A, 0.00, N/A)	424.4	N/A	1.2590 [2.0000]	63.0% { 34.8% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 106871	(10.69, N/A) (N/A, 0.00, N/A)	734.0	N/A	1.2372 [2.0000]	61.9% { 35.4% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (18)
 Acquired: 2022/12/21 - 22:16

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) 623027	(9.50 , N/A) (N/A , 0.00 , N/A)	447.8	N/A	7.7278 [4.0000]	193.2% { 107.3% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 331000	(9.67 , N/A) (N/A , -0.01 , N/A)	362.3	N/A	4.6580 [4.0000]	116.4% { 73.3% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 320333	(10.57 , N/A) (N/A , 0.00 , N/A)	996.9	N/A	24.3811 [20.0000]	121.9% { 68.3% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 141310	(10.66 , N/A) (N/A , 0.00 , N/A)	1094.0	N/A	23.6251 [20.0000]	118.1% { 64.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1270880	(6.49 , N/A) (N/A , 0.01 , N/A)	968.1	N/A	7.4909 [8.0000]	93.6% { 104.6% }			

FORM I ANALYSIS DATA SHEET

ADIT6-DU02-SOFD01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-05RE1
		File ID:	S2022-12-21B (19)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:29
Solids:		Preparation:	PFAS Leachates
		Dilution:	10
Initial/Final:	107.57 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFHXA	930	19	19	2.6	
6:2FTS	9500	74	37	14	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-05RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (19)
 Acquired: 2022/12/21 - 22:29

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) 198919	(3.69, 1.00) (0.00, N/A, 0.0)	66.7	N/A 0.0 0.0	1.7230	N/A			
PFPeA	(262.9 / 219.0) 114231 (262.9 / 69.0) 1174	(4.98, 1.00) (0.00, N/A, 0.0)	399.7 65.5	0.0103 91.9 88.7	0.6641	N/A			
PFHxA	(313.0 / 269.0) 1450913 (313.0 / 119.0) 138285	(6.13, 1.00) (0.00, N/A, 0.0)	689.8 468.8	0.0953 97.5 102.8	5.0221	N/A			
PFHpA	(363.0 / 319.0) 42965 (363.0 / 169.0) 13020	(7.05, 1.00) (0.00, N/A, 0.4)	128.5 96.2	0.3030 97.3 97.2	0.1855	N/A			
PFOA	(413.0 / 369.0) 81403 (413.0 / 169.0) 27850	(7.87, 1.00) (0.00, N/A, 0.3)	176.9 266.6	0.3421 104.7 104.0	0.3064	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.: 22L0023-05RE1@10
DF, IV: 1, 1.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (19)
Acquired: 2022/12/21 - 22:29

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) 10772482 (427.0 / 81.0) 8125042	(7.53 , 1.00) (0.00 , N/A , 0.1)	731.7 709.5	0.7542 96.9 116.5	51.3018	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			

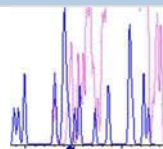
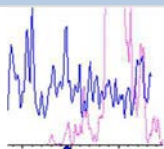
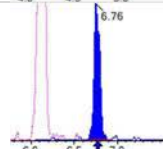
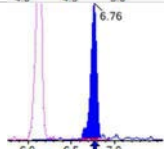
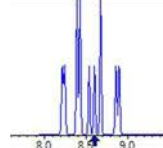
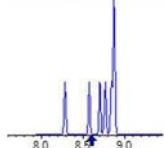
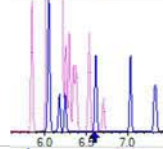
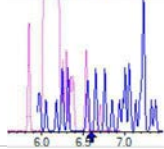
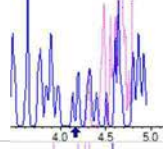
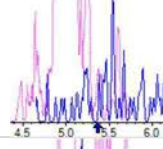
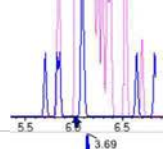
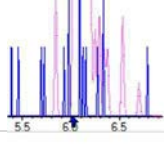
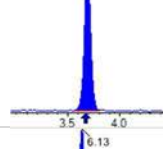
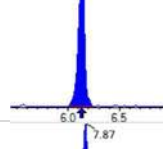
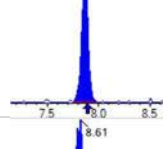
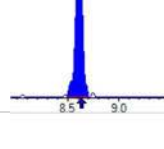


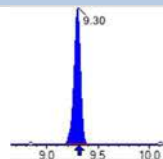
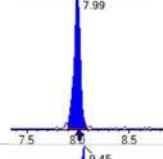
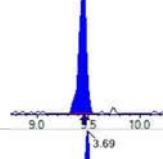
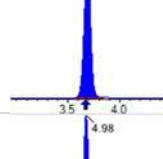
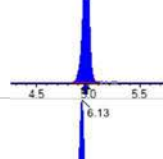
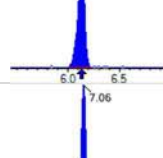
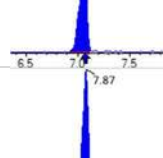
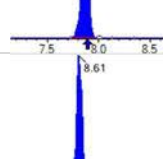
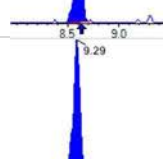
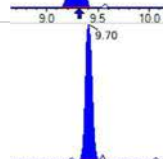

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

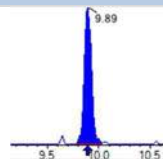
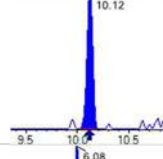
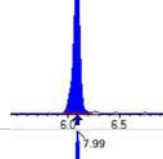
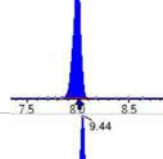
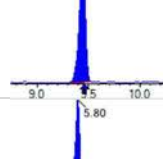
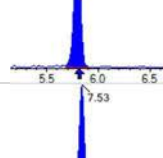
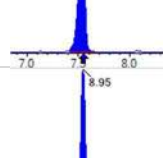
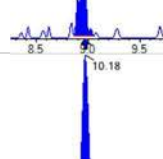
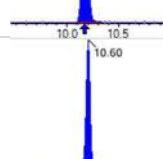
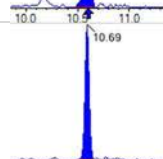

Sample I.D.: 22L0023-05RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

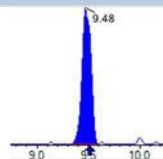
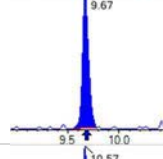
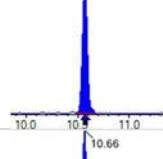
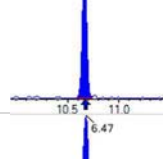
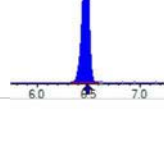
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (19)
 Acquired: 2022/12/21 - 22:29

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			
11CI-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (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) 15792 (341.0 / 217.0) 34399	(6.76, 1.10) (N/A, -0.01, 0.0)	205.1 167.3	2.1783 148.8 140.7	0.3093	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 18824	(3.69, N/A) (N/A, 0.02, N/A)	338.0	N/A	1.3524 [1.0000]	135.2% { 11.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 31707	(6.13, N/A) (N/A, 0.00, N/A)	324.3	N/A	1.3731 [1.0000]	137.3% { 14.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 23562	(7.87, N/A) (N/A, -0.02, N/A)	233.9	N/A	1.0717 [1.0000]	107.2% { 9.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 24742	(8.61, N/A) (N/A, -0.02, N/A)	191.8	N/A	1.3361 [1.0000]	133.6% { 13.7% }			

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_IIS	(515.1 / 470.1) 31723	(9.30, N/A) (N/A, -0.01, N/A)	442.2	N/A	1.7165 [1.0000]	171.7% { 15.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 40854	(7.99, N/A) (N/A, -0.02, N/A)	309.0	N/A	1.0120 [1.0000]	101.2% { 9.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 37974	(9.45, N/A) (N/A, -0.01, N/A)	133.7	N/A	1.1898 [1.0000]	119.0% { 11.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 141574	(3.69, N/A) (N/A, 0.02, N/A)	812.1	N/A	0.7307 [0.8000]	91.3% { 11.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 78346	(4.98, N/A) (N/A, 0.00, N/A)	472.8	N/A	0.3551 [0.4000]	88.8% { 11.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 67279	(6.13, N/A) (N/A, 0.00, N/A)	340.9	N/A	0.1844 [0.2000]	92.2% { 12.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 50818	(7.06, N/A) (N/A, -0.01, N/A)	326.8	N/A	0.1597 [0.2000]	79.8% { 10.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 54031	(7.87, N/A) (N/A, -0.01, N/A)	475.1	N/A	0.2091 [0.2000]	104.6% { 10.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 20273	(8.61, N/A) (N/A, -0.02, N/A)	188.7	N/A	0.0745 [0.1000]	74.5% { 11.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 26290	(9.29, N/A) (N/A, -0.02, N/A)	330.0	N/A	0.0583 [0.1000]	58.3% { 10.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 25137	(9.70, N/A) (N/A, -0.02, N/A)	184.7	N/A	0.0392 [0.1000]	39.2% { 7.8% }			

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_EIS	(615.0 / 570.0) 32858	(9.89, N/A) (N/A, 0.00, N/A)	179.6	N/A	0.0513 [0.1000]	51.3% {8.9%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 15175	(10.12, N/A) (N/A, 0.00, N/A)	71.8	N/A	0.0357 [0.1000]	35.7% {5.5%}			
13C3_PFBs_EIS	(302.0 / 80.0) 145928	(6.08, N/A) (N/A, 0.00, N/A)	381.4	N/A	0.2113 [0.2000]	105.6% {10.4%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 80159	(7.99, N/A) (N/A, -0.02, N/A)	460.7	N/A	0.2181 [0.2000]	109.1% {11.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 102302	(9.44, N/A) (N/A, -0.01, N/A)	245.2	N/A	0.1570 [0.2000]	78.5% {9.6%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 28255	(5.80, N/A) (N/A, 0.00, N/A)	240.1	N/A	0.4830 [0.4000]	120.7% {12.5%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 54628	(7.53, N/A) (N/A, -0.01, N/A)	349.9	N/A	0.7756 [0.4000]	193.9% {19.0%}			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 10876	(8.95, N/A) (N/A, -0.01, N/A)	58.2	N/A	0.1542 [0.4000]	38.6% {4.8%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 110625	(10.18, N/A) (N/A, 0.00, N/A)	368.2	N/A	0.1343 [0.2000]	67.1% {7.8%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 14167	(10.60, N/A) (N/A, 0.00, N/A)	141.9	N/A	0.0788 [0.2000]	39.4% {4.2%}			
D5_NEiFOsa_EIS	(531.1 / 169.0) 11223	(10.69, N/A) (N/A, -0.01, N/A)	209.5	N/A	0.0676 [0.2000]	33.8% {3.7%}			

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) 51799	(9.48, N/A) (N/A, -0.02, N/A)	164.4	N/A	0.3342 [0.4000]	83.6% { 8.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 34978	(9.67, N/A) (N/A, -0.01, N/A)	135.2	N/A	0.2561 [0.4000]	64.0% { 7.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 35198	(10.57, N/A) (N/A, 0.00, N/A)	389.5	N/A	1.3936 [2.0000]	69.7% { 7.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 16885	(10.66, N/A) (N/A, 0.00, N/A)	286.8	N/A	1.4686 [2.0000]	73.4% { 7.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 137250	(6.47, N/A) (N/A, -0.01, N/A)	442.9	N/A	0.7075 [0.8000]	88.4% { 11.3% }			

FORM I ANALYSIS DATA SHEET

ADIT6-DU02-SOFT01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-06
		File ID:	S2022-12-21B (20)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:42
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	109.78 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	130	7.3	3.6	0.96	
PFPEA	100	3.6	3.6	0.30	
PFHXA	510	1.8	1.8	0.25	
PFHPA	17	1.8	0.91	0.19	
PFOA	23	1.8	0.91	0.68	
PFNA	0.91 U	1.8	0.91	0.37	
PFDA	3.9	1.8	0.91	0.46	
PFUnA	0.91 U	1.8	0.91	0.73	
PFDOA	0.91 U	1.8	0.91	0.50	
PFTRDA	1.4 U	1.8	1.4	0.91	
PFTEDA	0.91 U	1.8	0.91	0.91	
PFBS	0.22 J	1.8	0.91	0.17	
PFPEs	0.91 U	1.8	0.91	0.29	
PFHXS	0.94 J	1.8	0.91	0.15	
PFHPS	0.91 U	1.8	0.91	0.23	
PFOS	7.5	1.8	0.91	0.29	
PFNS	0.91 U	1.8	0.91	0.55	
PFDS	0.91 U	1.8	0.91	0.68	
PFDOS	0.91 U	1.8	0.91	0.55	
4:2FTS	20	7.3	3.6	1.3	
8:2FTS	3.6 U	7.3	3.6	0.37	
PFOSA	0.91 U	1.8	0.91	0.46	
NMeFOSA	3.6 U	7.3	3.6	2.1	
NEtFOSA	3.6 U	7.3	3.6	1.9	
NMeFOSAA	0.91 U	1.8	0.91	0.50	
NEtFOSAA	0.91 U	1.8	0.91	0.50	
NMeFOSE	5.5 U	7.3	5.5	4.6	
NEtFOSE	5.5 U	7.3	5.5	4.6	
HFPO-DA	1.8 U	3.6	1.8	0.77	
ADONA	1.8 U	3.6	1.8	0.55	

FORM I ANALYSIS DATA SHEET

ADIT6-DU02-SOFT01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-06
		File ID:	S2022-12-21B (20)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:42
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	109.78 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFEEESA	1.8 U	3.6	1.8	0.50	
PFMPA	1.8 U	3.6	1.8	0.25	
PFMBA	1.8 U	3.6	1.8	0.41	
NFDHA	1.8 U	3.6	1.8	1.4	
9CL-PF3ONS	1.8 U	3.6	1.8	0.96	
11CL-PF3OUDS	1.8 U	3.6	1.8	0.96	
3:3FTCA	3.3 J	7.3	3.6	2.6	
5:3FTCA	29	7.3	3.6	2.0	
7:3FTCA	3.6 U	7.3	3.6	2.5	

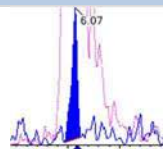
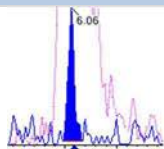
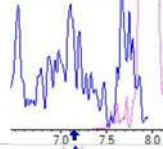
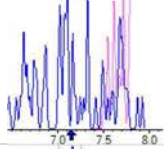
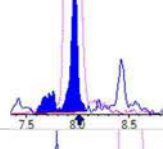
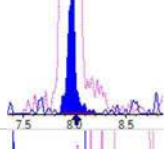
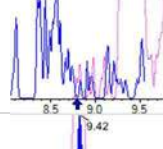
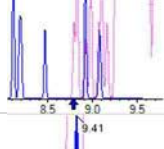
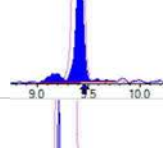
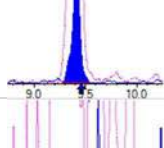
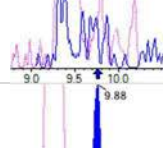
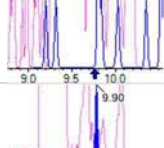
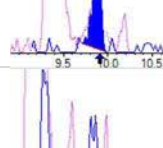
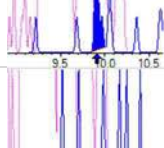
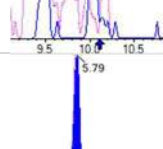
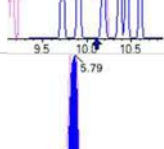
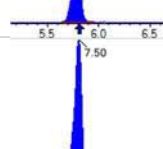
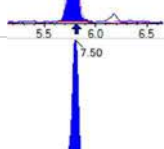
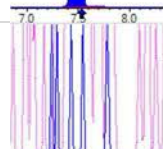
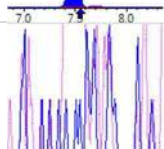

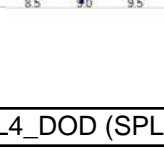


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-06
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (20)
 Acquired: 2022/12/21 - 22:42

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) 779600	(3.65, 1.00) (0.00, N/A, 0.0)	70.6	N/A 0.0 0.0	7.1178	N/A			
PFPeA	(262.9 / 219.0) 941539 (262.9 / 69.0) 10743	(4.97, 1.00) (0.00, N/A, 0.1)	682.5 201.4	0.0114 101.9 98.4	5.6984	N/A			
PFHxA	(313.0 / 269.0) 6778914 (313.0 / 119.0) 641020	(6.11, 1.00) (0.00, N/A, 0.0)	774.0 600.6	0.0946 96.7 102.0	27.9823	N/A			
PFHpA	(363.0 / 319.0) 207602 (363.0 / 169.0) 59286	(7.04, 1.00) (0.00, N/A, 0.3)	363.9 227.2	0.2856 91.7 91.6	0.9282	N/A			
PFOA	(413.0 / 369.0) 244620 (413.0 / 169.0) 79764	(7.84, 1.00) (0.00, N/A, 0.2)	443.5 376.2	0.3261 99.8 99.1	1.2531	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) 35782 (513.0 / 169.0) 2108	(9.27, 1.00) (0.01, N/A, 0.0)	127.7 29.2	0.0589 61.6 54.6	0.2159	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			

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) 4966 (298.9 / 99.0) 3587	(6.07, 1.00) (0.00, N/A, 0.3)	28.5 24.7	0.7223 117.4 115.6	0.0122	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) 24648 (399.0 / 99.0) 8314	(7.97, 1.00) (0.00, N/A, -0.1)	138.5 171.4	0.3373 100.3 99.3	0.0517	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) 184439 (499.0 / 99.0) 45192	(9.42, 1.00) (0.00, N/A, 0.1)	221.0 143.5	0.2450 100.8 114.1	0.4121	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) 14150 (599.0 / 99.0) 1619	(9.88, 1.05) (N/A, -0.04, -1.6)	39.3 21.9	0.1144 50.8 55.2	0.0257	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) 293049 (327.0 / 81.0) 150581	(5.79, 1.00) (0.00, N/A, 0.1)	605.0 207.4	0.5138 104.0 99.6	1.0946	N/A			
6:2FTS	(427.0 / 407.0) 39778309 (427.0 / 81.0) 29955554	(7.50, 1.00) (0.00, N/A, 0.1)	726.5 728.5	0.7531 96.8 116.3	296.9648	N/A			E,
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			

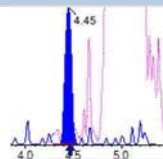
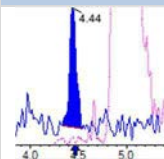
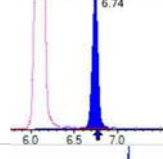
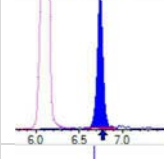
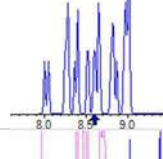
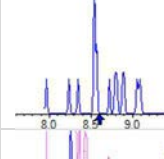
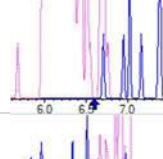
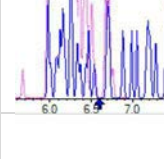
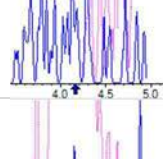
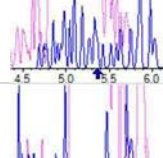
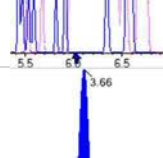
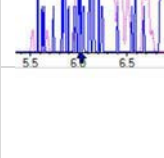
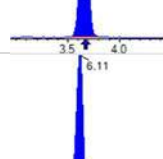
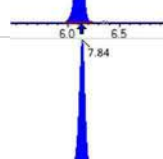
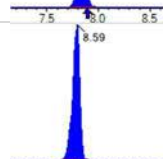



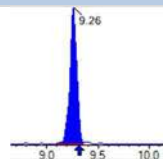
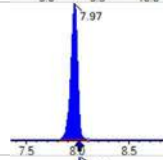
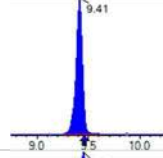
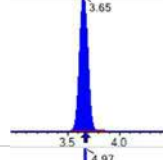
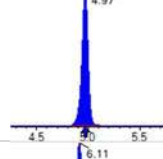
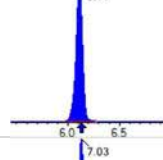
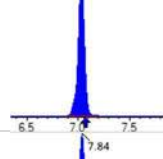
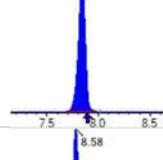
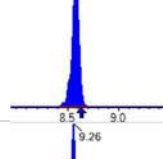
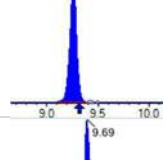
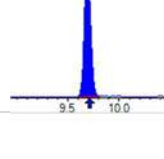
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 Instrument: Saphira
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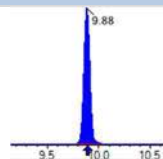
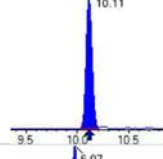
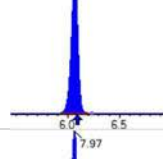
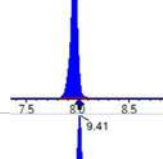
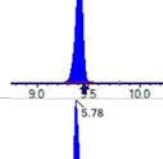
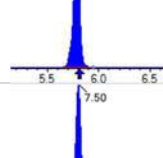
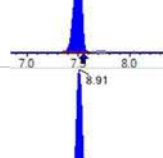
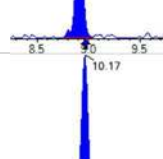
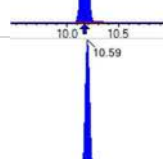
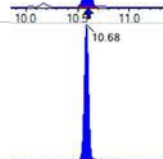

Sample I.D.: 22L0023-06
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (20)
 Acquired: 2022/12/21 - 22:42

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			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (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) 1018 (241.0 / 117.0) 2306	(4.45, 0.90) (N/A, -0.01, 0.5)	40.1 24.1	2.2664 135.4 131.6	0.1785	N/A			
5:3FTCA	(341.0 / 236.7) 67889 (341.0 / 217.0) 106534	(6.74, 1.10) (N/A, -0.03, 0.1)	401.2 239.8	1.5692 107.2 101.3	1.5860	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 178262	(3.66, N/A) (N/A, -0.01, N/A)	671.0	N/A	1.2807 [1.0000]	128.1% { 109.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 297708	(6.11, N/A) (N/A, -0.02, N/A)	687.2	N/A	1.2892 [1.0000]	128.9% { 133.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 222815	(7.84, N/A) (N/A, -0.05, N/A)	974.1	N/A	1.0135 [1.0000]	101.3% { 91.4% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 174599	(8.59, N/A) (N/A, -0.04, N/A)	309.9	N/A	0.9429 [1.0000]	94.3% { 96.8% }			

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) 180929	(9.26, N/A) (N/A, -0.05, N/A)	263.9	N/A	0.9790 [1.0000]	97.9% { 90.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 414203	(7.97, N/A) (N/A, -0.05, N/A)	844.8	N/A	1.0260 [1.0000]	102.6% { 100.1% }			
13C4_PFOS_IIS	(502.8 / 79.9) 256671	(9.41, N/A) (N/A, -0.04, N/A)	334.5	N/A	0.8042 [1.0000]	80.4% { 76.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1343101	(3.65, N/A) (N/A, -0.01, N/A)	912.8	N/A	7.3205 [8.0000]	91.5% { 107.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 752536	(4.97, N/A) (N/A, 0.00, N/A)	780.0	N/A	3.6329 [4.0000]	90.8% { 113.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 564160	(6.11, N/A) (N/A, -0.02, N/A)	674.9	N/A	1.6467 [2.0000]	82.3% { 106.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 490755	(7.03, N/A) (N/A, -0.04, N/A)	700.4	N/A	1.6420 [2.0000]	82.1% { 105.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 397036	(7.84, N/A) (N/A, -0.05, N/A)	619.8	N/A	1.6248 [2.0000]	81.2% { 77.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 153689	(8.58, N/A) (N/A, -0.05, N/A)	587.9	N/A	0.8005 [1.0000]	80.0% { 83.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 174106	(9.26, N/A) (N/A, -0.05, N/A)	389.4	N/A	0.6766 [1.0000]	67.7% { 69.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 142429	(9.69, N/A) (N/A, -0.03, N/A)	277.6	N/A	0.3891 [1.0000]	38.9% { 44.3% }			

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) 275132	(9.88, N/A) (N/A, -0.01, N/A)	587.0	N/A	0.7531 [1.0000]	75.3% { 74.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 105286	(10.11, N/A) (N/A, -0.01, N/A)	278.6	N/A	0.4340 [1.0000]	43.4% { 38.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1489105	(6.07, N/A) (N/A, -0.02, N/A)	759.9	N/A	2.1263 [2.0000]	106.3% { 105.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 613183	(7.97, N/A) (N/A, -0.05, N/A)	857.0	N/A	1.6456 [2.0000]	82.3% { 88.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 824636	(9.41, N/A) (N/A, -0.04, N/A)	461.1	N/A	1.8720 [2.0000]	93.6% { 77.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 323864	(5.78, N/A) (N/A, -0.02, N/A)	700.8	N/A	5.4601 [4.0000]	136.5% { 143.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 348478	(7.50, N/A) (N/A, -0.04, N/A)	558.5	N/A	4.8798 [4.0000]	122.0% { 121.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 50691	(8.91, N/A) (N/A, -0.05, N/A)	129.0	N/A	0.7091 [4.0000]	17.7% { 22.5% }			S1,
13C8_PFOsa_EIS	(506.0 / 78.0) 749478	(10.17, N/A) (N/A, -0.01, N/A)	1164.7	N/A	1.3460 [2.0000]	67.3% { 52.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 100416	(10.59, N/A) (N/A, -0.01, N/A)	399.6	N/A	0.8260 [2.0000]	41.3% { 29.6% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 84586	(10.68, N/A) (N/A, -0.01, N/A)	641.8	N/A	0.7537 [2.0000]	37.7% { 28.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-06
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (20)
 Acquired: 2022/12/21 - 22:42

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) 534680	(9.47, N/A) (N/A, -0.04, N/A)	402.2	N/A	5.1043 [4.0000]	127.6% { 92.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 407361	(9.66, N/A) (N/A, -0.03, N/A)	376.8	N/A	4.4121 [4.0000]	110.3% { 90.2% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 299345	(10.56, N/A) (N/A, -0.01, N/A)	919.7	N/A	17.5355 [20.0000]	87.7% { 63.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 134975	(10.66, N/A) (N/A, -0.01, N/A)	1054.1	N/A	17.3679 [20.0000]	86.8% { 61.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1246021	(6.45, N/A) (N/A, -0.03, N/A)	785.2	N/A	6.8407 [8.0000]	85.5% { 102.5% }			

FORM I ANALYSIS DATA SHEET

ADIT6-DU02-SOFT01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-06RE1
		File ID:	S2022-12-21B (21)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 22:54
Solids:		Preparation:	PFAS Leachates
		Dilution:	10
Initial/Final:	109.78 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
6:2FTS	6000	73	36	14	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-06RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (21)
 Acquired: 2022/12/21 - 22:54

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) 70663	(3.71, 1.00) (0.00, N/A, 0.0)	58.2	N/A 0.0 0.0	0.7099	N/A			
PFPeA	(262.9 / 219.0) 85443 (262.9 / 69.0) 1157	(5.02, 1.00) (0.00, N/A, 0.3)	438.5 43.9	0.0135 121.0 116.8	0.5656	N/A			
PFHxA	(313.0 / 269.0) 637211 (313.0 / 119.0) 60483	(6.19, 1.00) (0.00, N/A, 0.2)	604.4 306.0	0.0949 97.1 102.4	2.9716	N/A			
PFHpA	(363.0 / 319.0) 19303 (363.0 / 169.0) 5820	(7.13, 1.00) (0.01, N/A, 0.5)	75.2 34.9	0.3015 96.8 96.7	0.1012	N/A			
PFOA	(413.0 / 369.0) 26482 (413.0 / 169.0) 7988	(7.94, 1.00) (-0.01, N/A, -0.3)	69.6 148.0	0.3017 92.3 91.7	0.1235	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.: 22L0023-06RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (21)
 Acquired: 2022/12/21 - 22:54

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) 4826882 (427.0 / 81.0) 3437433	(7.60 , 1.00) (0.00 , N/A , -0.1)	957.0 1035.2	0.7121 91.5 110.0	32.7994	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			

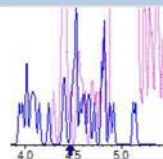
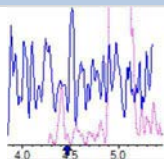
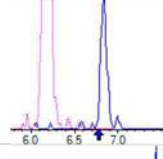
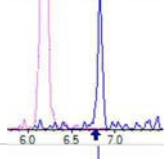
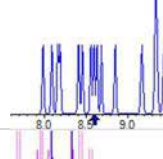
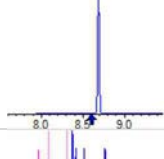
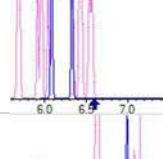
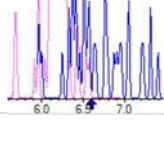
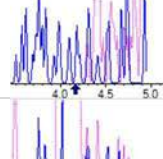
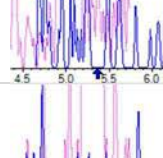
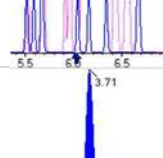
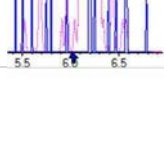
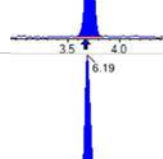
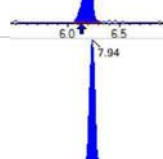
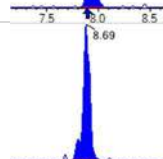



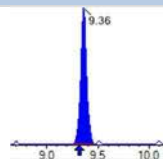
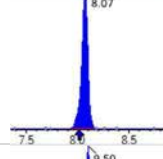
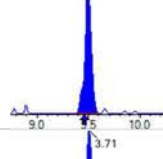
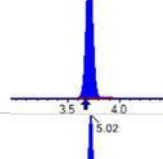
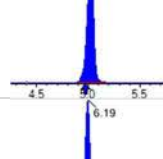
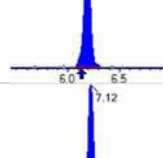
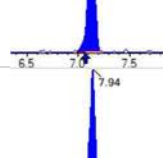
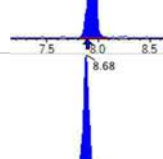
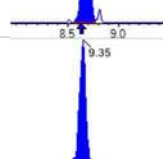
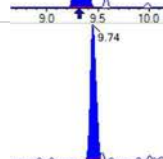

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

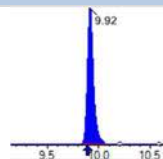
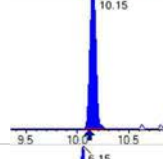
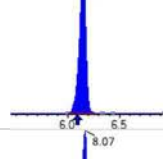
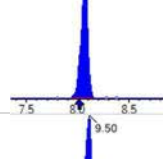
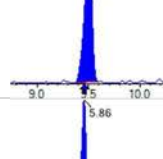
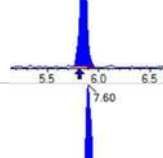
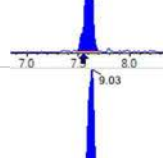
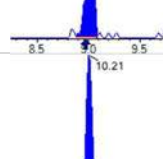
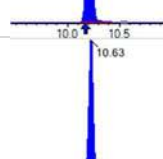
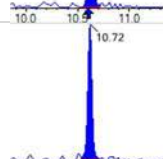

Sample I.D.: 22L0023-06RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-21.dam

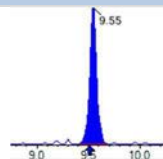
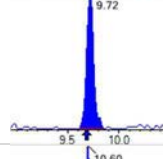
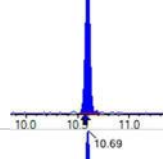
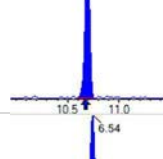
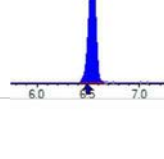
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (21)
 Acquired: 2022/12/21 - 22:54

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	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 17656	(3.71, N/A) (N/A, 0.04, N/A)	299.9	N/A	1.2684 [1.0000]	126.8% { 10.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 27637	(6.19, N/A) (N/A, 0.05, N/A)	270.9	N/A	1.1968 [1.0000]	119.7% { 12.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 23933	(7.94, N/A) (N/A, 0.05, N/A)	300.4	N/A	1.0886 [1.0000]	108.9% { 9.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 19271	(8.69, N/A) (N/A, 0.06, N/A)	138.1	N/A	1.0406 [1.0000]	104.1% { 10.7% }			

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_IIS	(515.1 / 470.1) 20955	(9.36, N/A) (N/A, 0.05, N/A)	308.1	N/A	1.1339 [1.0000]	113.4% { 10.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 40998	(8.07, N/A) (N/A, 0.06, N/A)	382.9	N/A	1.0155 [1.0000]	101.6% { 9.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 30312	(9.50, N/A) (N/A, 0.05, N/A)	120.1	N/A	0.9497 [1.0000]	95.0% { 9.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 122062	(3.71, N/A) (N/A, 0.04, N/A)	847.1	N/A	0.6717 [0.8000]	84.0% { 9.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 68800	(5.02, N/A) (N/A, 0.05, N/A)	632.4	N/A	0.3578 [0.4000]	89.4% { 10.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 49937	(6.19, N/A) (N/A, 0.06, N/A)	358.7	N/A	0.1570 [0.2000]	78.5% { 9.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 41865	(7.12, N/A) (N/A, 0.05, N/A)	380.5	N/A	0.1509 [0.2000]	75.4% { 9.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 43628	(7.94, N/A) (N/A, 0.06, N/A)	315.5	N/A	0.1662 [0.2000]	83.1% { 8.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 20740	(8.68, N/A) (N/A, 0.05, N/A)	169.6	N/A	0.0979 [0.1000]	97.9% { 11.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 18493	(9.35, N/A) (N/A, 0.04, N/A)	213.4	N/A	0.0620 [0.1000]	62.0% { 7.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 22560	(9.74, N/A) (N/A, 0.03, N/A)	121.4	N/A	0.0532 [0.1000]	53.2% { 7.0% }			

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) 32206	(9.92, N/A) (N/A, 0.02, N/A)	328.0	N/A	0.0761 [0.1000]	76.1% {8.7%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 17380	(10.15, N/A) (N/A, 0.03, N/A)	251.8	N/A	0.0619 [0.1000]	61.9% {6.3%}			
13C3_PFBs_EIS	(302.0 / 80.0) 133277	(6.15, N/A) (N/A, 0.06, N/A)	439.0	N/A	0.1923 [0.2000]	96.1% {9.5%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 68411	(8.07, N/A) (N/A, 0.05, N/A)	552.2	N/A	0.1855 [0.2000]	92.7% {9.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 93414	(9.50, N/A) (N/A, 0.05, N/A)	170.8	N/A	0.1796 [0.2000]	89.8% {8.8%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 25932	(5.86, N/A) (N/A, 0.05, N/A)	240.4	N/A	0.4417 [0.4000]	110.4% {11.5%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 38286	(7.60, N/A) (N/A, 0.06, N/A)	237.6	N/A	0.5416 [0.4000]	135.4% {13.3%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 16183	(9.03, N/A) (N/A, 0.06, N/A)	83.0	N/A	0.2287 [0.4000]	57.2% {7.2%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 145365	(10.21, N/A) (N/A, 0.03, N/A)	383.9	N/A	0.2211 [0.2000]	110.5% {10.3%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 13824	(10.63, N/A) (N/A, 0.02, N/A)	121.4	N/A	0.0963 [0.2000]	48.1% {4.1%}			
D5_NEtFOSA_EIS	(531.1 / 169.0) 8181	(10.72, N/A) (N/A, 0.02, N/A)	127.7	N/A	0.0617 [0.2000]	30.9% {2.7%}			

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) 54388	(9.55, N/A) (N/A, 0.04, N/A)	169.7	N/A	0.4397 [0.4000]	109.9% { 9.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 41825	(9.72, N/A) (N/A, 0.03, N/A)	100.1	N/A	0.3836 [0.4000]	95.9% { 9.3% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 32336	(10.60, N/A) (N/A, 0.03, N/A)	351.2	N/A	1.6039 [2.0000]	80.2% { 6.9% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 14369	(10.69, N/A) (N/A, 0.03, N/A)	246.1	N/A	1.5656 [2.0000]	78.3% { 6.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 116105	(6.54, N/A) (N/A, 0.06, N/A)	474.0	N/A	0.6866 [0.8000]	85.8% { 9.6% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-DU04A-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-07
		File ID:	S2022-12-21B (22)
Sampled:	12/02/22 10:55	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 23:07
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	109 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	73	7.3	3.7	0.96	
PFPEA	220	3.7	3.7	0.30	
PFHXA	110	1.8	1.8	0.25	
PFHPA	59	1.8	0.92	0.19	
PFOA	2.3	1.8	0.92	0.69	
PFNA	1.2 J	1.8	0.92	0.38	
PFDA	0.76 J	1.8	0.92	0.46	IR2,
PFUnA	0.92 U	1.8	0.92	0.73	IR2,
PFDOA	0.92 U	1.8	0.92	0.50	
PFTRDA	1.4 U	1.8	1.4	0.92	
PFTEDA	0.92 U	1.8	0.92	0.92	
PFBS	0.29 J	1.8	0.92	0.17	
PFPEs	0.92 U	1.8	0.92	0.29	
PFHXS	2.4	1.8	0.92	0.15	
PFHPS	0.92 U	1.8	0.92	0.23	
PFOS	42	1.8	0.92	0.29	
PFNS	0.92 U	1.8	0.92	0.55	
PFDS	0.92 U	1.8	0.92	0.69	IR1,
PFDOS	0.92 U	1.8	0.92	0.55	
4:2FTS	3.7 U	7.3	3.7	1.3	
6:2FTS	180	7.3	3.7	1.4	
8:2FTS	3.7 U	7.3	3.7	0.38	
PFOSA	2.5	1.8	0.92	0.46	
NMeFOSA	3.7 U	7.3	3.7	2.2	
NEtFOSA	3.7 U	7.3	3.7	1.9	
NMeFOSAA	0.92 U	1.8	0.92	0.50	
NEtFOSAA	0.92 U	1.8	0.92	0.50	
NMeFOSE	5.5 U	7.3	5.5	4.6	
NEtFOSE	5.5 U	7.3	5.5	4.6	
HFPO-DA	1.8 U	3.7	1.8	0.78	

FORM I
ANALYSIS DATA SHEET
ADIT6-DU04A-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-07
		File ID:	S2022-12-21B (22)
Sampled:	12/02/22 10:55	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 23:07
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	109 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	1.8 U	3.7	1.8	0.55	
PFEESA	1.8 U	3.7	1.8	0.50	
PFMPA	1.8 U	3.7	1.8	0.25	
PFMBA	1.8 U	3.7	1.8	0.42	
NFDHA	1.8 U	3.7	1.8	1.4	
9CL-PF3ONS	1.8 U	3.7	1.8	0.96	
11CL-PF3OUDS	1.8 U	3.7	1.8	0.96	
3:3FTCA	3.6 J	7.3	3.7	2.6	
5:3FTCA	2.6 J	7.3	3.7	2.0	
7:3FTCA	3.7 U	7.3	3.7	2.5	

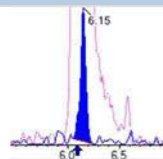
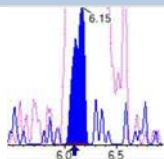
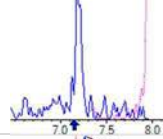
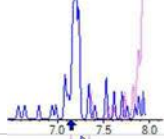
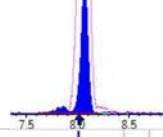
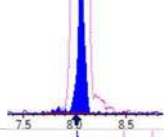
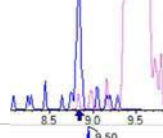
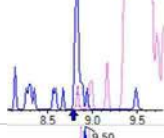
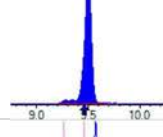
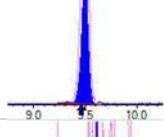
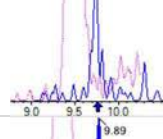
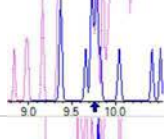
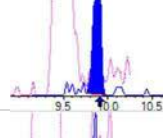
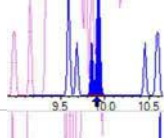
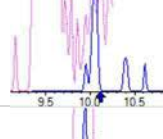
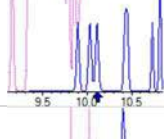
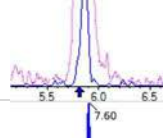
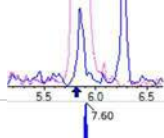
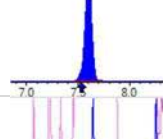
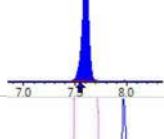
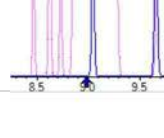
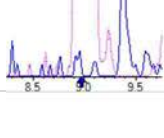


Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0023-07
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (22)
Acquired: 2022/12/21 - 23:07

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) 447857	(3.70, 1.00) (0.00, N/A, 0.0)	62.1	N/A 0.0 0.0	3.9689	N/A			
PFPeA	(262.9 / 219.0) 2123175 (262.9 / 69.0) 24274	(5.02, 1.00) (0.00, N/A, 0.2)	721.8 197.0	0.0114 102.1 98.6	12.0292	N/A			
PFHxA	(313.0 / 269.0) 1519802 (313.0 / 119.0) 135767	(6.20, 1.00) (0.00, N/A, 0.0)	742.8 419.5	0.0893 91.4 96.4	5.8795	N/A			
PFHpA	(363.0 / 319.0) 814531 (363.0 / 169.0) 248674	(7.13, 1.00) (0.00, N/A, 0.2)	567.2 464.0	0.3053 98.0 97.9	3.2012	N/A			
PFOA	(413.0 / 369.0) 38880 (413.0 / 169.0) 9501	(7.94, 1.00) (0.00, N/A, 0.0)	87.3 107.3	0.2444 74.8 74.3	0.1230	N/A			
PFNA	(463.0 / 419.0) 14417 (463.0 / 169.0) 3160	(8.68, 1.00) (0.00, N/A, 0.1)	34.8 42.4	0.2192 113.7 95.5	0.0662	N/A			
PFDA	(513.0 / 469.0) 11436 (513.0 / 169.0) 1974	(9.36, 1.00) (0.00, N/A, -2.9)	26.5 210.8	0.1726 180.6 159.9	0.0413	N/A			IR2,
PFUnA	(563.0 / 519.0) 8971 (563.0 / 169.0) 1822	(9.74, 1.00) (0.00, N/A, -0.6)	38.3 62.2	0.2031 233.8 198.2	0.0310	N/A			IR2,
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			

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) 7184 (298.9 / 99.0) 3848	(6.15, 1.00) (0.00, N/A, 0.3)	55.9 17.4	0.5356 87.0 85.7	0.0156	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) 84659 (399.0 / 99.0) 32016	(8.07, 1.00) (0.00, N/A, 0.3)	1478.4 2284.1	0.3782 112.5 111.3	0.1331	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) 1480660 (499.0 / 99.0) 447245	(9.50, 1.00) (0.00, N/A, 0.3)	202.4 384.7	0.3021 124.2 140.7	2.2834	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) 15318 (599.0 / 99.0) 1121	(9.89, 1.04) (N/A, -0.03, -2.5)	54.7 18.4	0.0732 32.5 35.3	0.0192	N/A			IR1,
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) 1373672 (427.0 / 81.0) 1049530	(7.60, 1.00) (0.00, N/A, -0.1)	908.3 774.2	0.7640 98.2 118.0	9.6670	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.: 22L0023-07
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (22)
 Acquired: 2022/12/21 - 23:07

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) 88977 (498.0 / 478.0) 1510	(10.20 , 1.00) (0.00 , N/A , 1.3)	291.1 950.6	0.0170 81.4 72.4	0.1369	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			

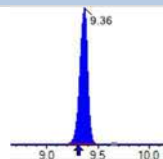
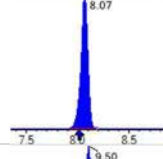
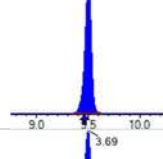
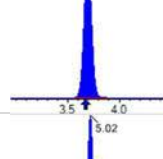
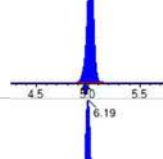
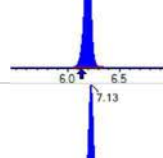
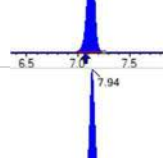
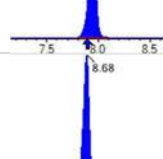
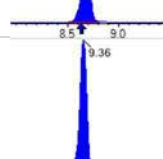
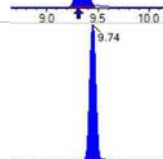



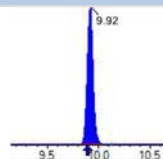
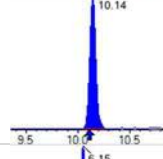
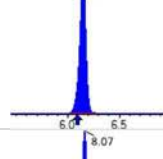
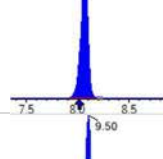
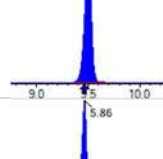
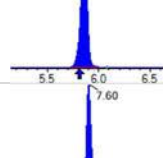
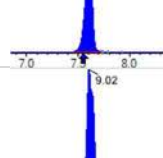
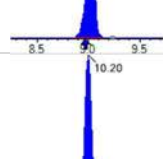
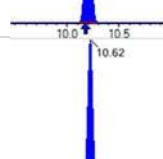
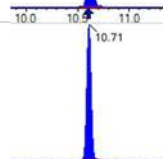

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

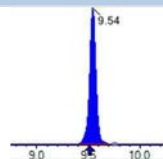
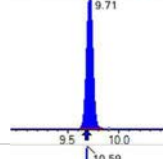
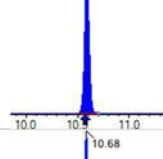
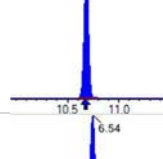
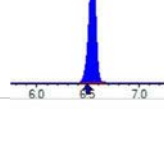
Sample I.D.: 22L0023-07
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (22)
 Acquired: 2022/12/21 - 23:07

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) 1194 (241.0 / 117.0) 2237	(4.48, 0.89) (N/A, 0.03, -0.8)	80.8 34.4	1.8732 111.9 108.8	0.1960	N/A			
5:3FTCA	(341.0 / 236.7) 6421 (341.0 / 217.0) 12119	(6.84, 1.10) (N/A, 0.07, 0.4)	77.5 38.6	1.8872 128.9 121.9	0.1406	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 187610	(3.70, N/A) (N/A, 0.03, N/A)	715.5	N/A	1.3478 [1.0000]	134.8% { 115.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 323056	(6.20, N/A) (N/A, 0.06, N/A)	644.5	N/A	1.3990 [1.0000]	139.9% { 144.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 327797	(7.94, N/A) (N/A, 0.05, N/A)	571.6	N/A	1.4910 [1.0000]	149.1% { 134.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 265887	(8.68, N/A) (N/A, 0.05, N/A)	444.8	N/A	1.4358 [1.0000]	143.6% { 147.5% }			

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) 274301	(9.36, N/A) (N/A, 0.05, N/A)	370.0	N/A	1.4842 [1.0000]	148.4% { 137.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 547667	(8.07, N/A) (N/A, 0.05, N/A)	824.3	N/A	1.3566 [1.0000]	135.7% { 132.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 427642	(9.50, N/A) (N/A, 0.05, N/A)	494.7	N/A	1.3398 [1.0000]	134.0% { 126.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1383734	(3.69, N/A) (N/A, 0.03, N/A)	856.9	N/A	7.1662 [8.0000]	89.6% { 110.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 803879	(5.02, N/A) (N/A, 0.05, N/A)	795.3	N/A	3.5763 [4.0000]	89.4% { 121.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 601970	(6.19, N/A) (N/A, 0.06, N/A)	648.0	N/A	1.6192 [2.0000]	81.0% { 114.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 558284	(7.13, N/A) (N/A, 0.06, N/A)	743.0	N/A	1.7214 [2.0000]	86.1% { 120.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 642731	(7.94, N/A) (N/A, 0.05, N/A)	679.0	N/A	1.7879 [2.0000]	89.4% { 125.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 253987	(8.68, N/A) (N/A, 0.05, N/A)	400.4	N/A	0.8687 [1.0000]	86.9% { 138.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 290701	(9.36, N/A) (N/A, 0.05, N/A)	297.0	N/A	0.7452 [1.0000]	74.5% { 116.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 366729	(9.74, N/A) (N/A, 0.03, N/A)	407.2	N/A	0.6609 [1.0000]	66.1% { 114.0% }			

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) 327022	(9.92, N/A) (N/A, 0.02, N/A)	630.0	N/A	0.5904 [1.0000]	59.0% { 88.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 144440	(10.14, N/A) (N/A, 0.03, N/A)	278.8	N/A	0.3927 [1.0000]	39.3% { 52.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1675171	(6.15, N/A) (N/A, 0.06, N/A)	776.4	N/A	1.8091 [2.0000]	90.5% { 119.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 818802	(8.07, N/A) (N/A, 0.05, N/A)	830.4	N/A	1.6620 [2.0000]	83.1% { 118.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1194818	(9.50, N/A) (N/A, 0.04, N/A)	564.1	N/A	1.6279 [2.0000]	81.4% { 112.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 372497	(5.86, N/A) (N/A, 0.06, N/A)	667.2	N/A	4.7496 [4.0000]	118.7% { 165.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 369681	(7.60, N/A) (N/A, 0.06, N/A)	587.5	N/A	3.9151 [4.0000]	97.9% { 128.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 351200	(9.02, N/A) (N/A, 0.06, N/A)	412.5	N/A	3.7155 [4.0000]	92.9% { 155.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1375407	(10.20, N/A) (N/A, 0.02, N/A)	607.2	N/A	1.4825 [2.0000]	74.1% { 97.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 162433	(10.62, N/A) (N/A, 0.02, N/A)	516.3	N/A	0.8019 [2.0000]	40.1% { 47.9% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 146381	(10.71, N/A) (N/A, 0.01, N/A)	701.3	N/A	0.7828 [2.0000]	39.1% { 48.5% }			

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 621579	(9.54, N/A) (N/A, 0.04, N/A)	526.8	N/A	3.5615 [4.0000]	89.0% { 107.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 544151	(9.71, N/A) (N/A, 0.03, N/A)	490.4	N/A	3.5374 [4.0000]	88.4% { 120.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 226272	(10.59, N/A) (N/A, 0.02, N/A)	777.9	N/A	7.9556 [20.0000]	39.8% { 48.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 110540	(10.68, N/A) (N/A, 0.02, N/A)	899.0	N/A	8.5371 [20.0000]	42.7% { 50.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1413679	(6.54, N/A) (N/A, 0.06, N/A)	726.5	N/A	7.1522 [8.0000]	89.4% { 116.3% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-DU01-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-08
		File ID:	S2022-12-21B (24)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 23:32
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	108.35 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	53	7.4	3.7	0.97	
PFPEA	140	3.7	3.7	0.30	
PFHXA	140	1.8	1.8	0.25	
PFHPA	34	1.8	0.92	0.19	
PFOA	6.1	1.8	0.92	0.69	
PFNA	1.7 J	1.8	0.92	0.38	
PFDA	1.1 J	1.8	0.92	0.46	IR2,
PFUnA	0.92 U	1.8	0.92	0.74	IR2,
PFDOA	0.92 U	1.8	0.92	0.51	
PFTRDA	1.4 U	1.8	1.4	0.92	
PFTEDA	0.92 U	1.8	0.92	0.92	
PFBS	0.42 J	1.8	0.92	0.17	
PFPEs	0.92 U	1.8	0.92	0.29	
PFHXS	2.6	1.8	0.92	0.15	
PFHPS	0.92 U	1.8	0.92	0.24	
PFOS	51	1.8	0.92	0.30	
PFNS	0.92 U	1.8	0.92	0.55	IR1,
PFDS	0.92 U	1.8	0.92	0.69	
PFDOS	0.92 U	1.8	0.92	0.55	
4:2FTS	17	7.4	3.7	1.3	
6:2FTS	2700	7.4	3.7	1.4	
8:2FTS	3.7 U	7.4	3.7	0.38	
PFOSA	0.48 J	1.8	0.92	0.46	
NMeFOSA	3.7 U	7.4	3.7	2.2	
NEtFOSA	3.7 U	7.4	3.7	1.9	
NMeFOSAA	0.92 U	1.8	0.92	0.51	
NEtFOSAA	0.92 U	1.8	0.92	0.51	
NMeFOSE	5.5 U	7.4	5.5	4.6	
NEtFOSE	5.5 U	7.4	5.5	4.6	
HFPO-DA	1.8 U	3.7	1.8	0.78	

FORM I
ANALYSIS DATA SHEET
ADIT6-DU01-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-08
		File ID:	S2022-12-21B (24)
Sampled:	12/02/22 13:00	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 23:32
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	108.35 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	1.8 U	3.7	1.8	0.55	
PFEESA	1.8 U	3.7	1.8	0.51	
PFMPA	1.8 U	3.7	1.8	0.25	
PFMBA	1.8 U	3.7	1.8	0.42	
NFDHA	1.8 U	3.7	1.8	1.4	
9CL-PF3ONS	1.8 U	3.7	1.8	0.97	
11CL-PF3OUDS	1.8 U	3.7	1.8	0.97	
3:3FTCA	6.4 J	7.4	3.7	2.6	
5:3FTCA	55	7.4	3.7	2.0	
7:3FTCA	3.7 U	7.4	3.7	2.5	

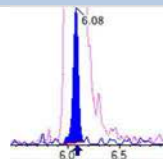
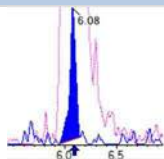
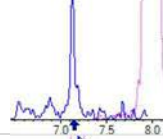
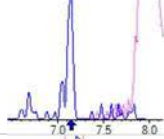
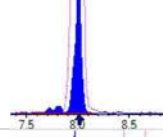
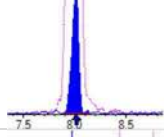
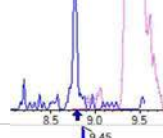
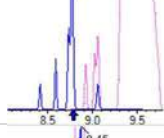
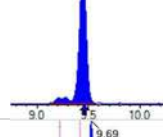
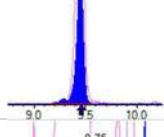
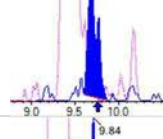
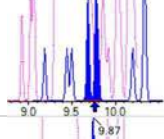
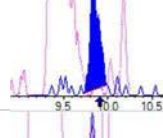
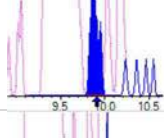
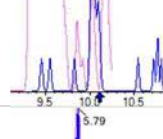
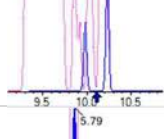
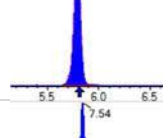
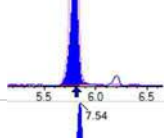
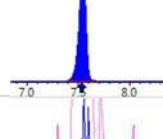
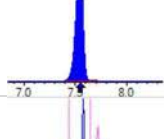
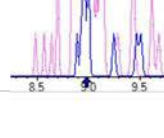
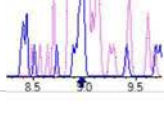


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-08
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (24)
 Acquired: 2022/12/21 - 23:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 325789	(3.65, 1.00) (0.00, N/A, 0.0)	63.2	N/A 0.0 0.0	2.8669	N/A			
PFPeA	(262.9 / 219.0) 1231727 (262.9 / 69.0) 14417	(4.96, 1.00) (0.00, N/A, 0.0)	654.7 242.7	0.0117 104.6 100.9	7.4593	N/A			
PFHxA	(313.0 / 269.0) 2045428 (313.0 / 119.0) 195080	(6.13, 1.00) (0.00, N/A, 0.0)	651.2 498.8	0.0954 97.5 102.9	7.4243	N/A			
PFHpA	(363.0 / 319.0) 442712 (363.0 / 169.0) 132184	(7.06, 1.00) (0.00, N/A, 0.0)	598.8 411.9	0.2986 95.9 95.8	1.8495	N/A			
PFOA	(413.0 / 369.0) 85123 (413.0 / 169.0) 26537	(7.88, 1.00) (0.00, N/A, -0.2)	194.1 189.2	0.3117 95.4 94.8	0.3285	N/A			
PFNA	(463.0 / 419.0) 16242 (463.0 / 169.0) 2842	(8.63, 1.00) (0.01, N/A, -0.5)	79.3 36.0	0.1750 90.8 76.2	0.0910	N/A			
PFDA	(513.0 / 469.0) 14993 (513.0 / 169.0) 2180	(9.30, 1.00) (0.00, N/A, -1.6)	34.9 35.5	0.1454 152.1 134.7	0.0572	N/A			IR2,
PFUnA	(563.0 / 519.0) 4232 (563.0 / 169.0) 1054	(9.72, 1.00) (0.01, N/A, -0.7)	21.0 30.1	0.2491 286.8 243.1	0.0173	N/A			IR2,
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			

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) 10514 (298.9 / 99.0) 5733	(6.08, 1.00) (0.00, N/A, 0.0)	74.0 43.3	0.5452 88.6 87.3	0.0228	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) 89081 (399.0 / 99.0) 25354	(8.01, 1.00) (0.00, N/A, -0.1)	1533.0 130226.2	0.2846 84.7 83.8	0.1399	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) 1455303 (499.0 / 99.0) 379201	(9.45, 1.00) (0.00, N/A, -0.2)	239.9 264.0	0.2606 107.1 121.4	2.7691	N/A			
PFNS	(549.0 / 80.0) 16840 (549.0 / 99.0) 1290	(9.69, 1.03) (N/A, -0.07, -3.1)	38.7 3983.9	0.0766 31.4 30.7	0.0289	N/A			IR1,
PFDS	(599.0 / 80.0) 10875 (599.0 / 99.0) 2786	(9.84, 1.04) (N/A, -0.08, -2.1)	36.6 18.7	0.2562 113.8 123.5	0.0168	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) 227378 (327.0 / 81.0) 127009	(5.79, 1.00) (0.00, N/A, 0.2)	557.3 217.5	0.5586 113.1 108.3	0.9284	N/A			
6:2FTS	(427.0 / 407.0) 18521920 (427.0 / 81.0) 12726586	(7.54, 1.00) (-0.01, N/A, -0.1)	769.5 850.8	0.6871 88.3 106.1	147.9941	N/A			E,
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			

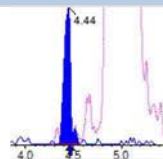
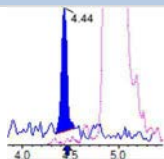
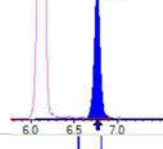
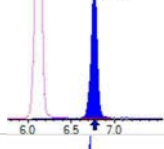
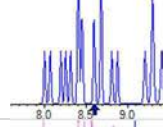
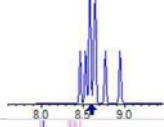
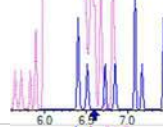
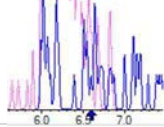
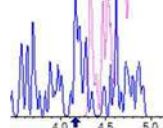
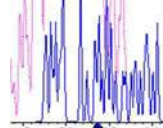
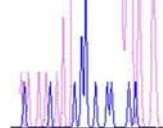
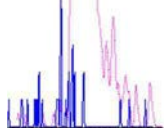
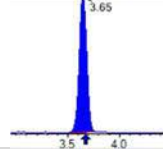
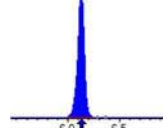
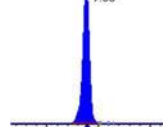
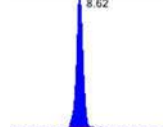


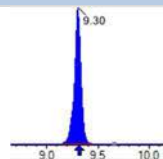
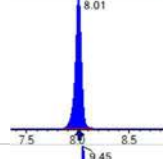
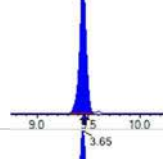
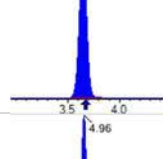
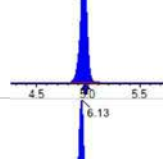
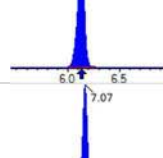
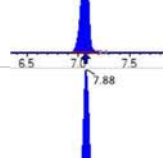
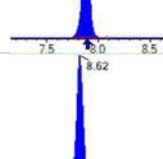
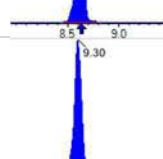
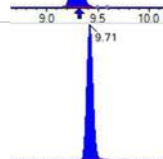

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

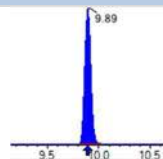
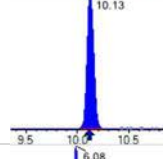
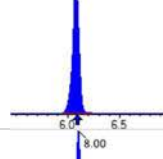
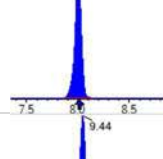
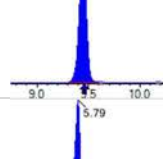
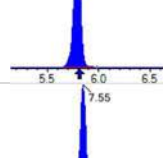
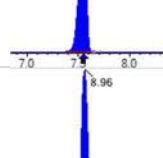
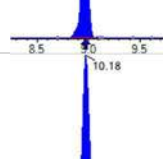
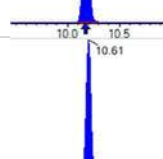
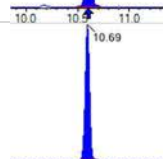

Sample I.D.: 22L0023-08
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

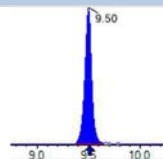
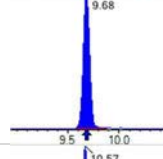
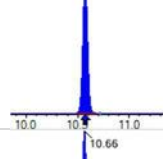
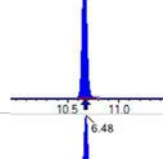
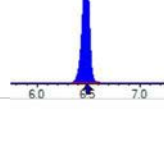
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (24)
 Acquired: 2022/12/21 - 23:32

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) 19153 (498.0 / 478.0) 910	(10.18 , 1.00) (0.01 , N/A , -1.0)	110.6 94.1	0.0475 227.9 202.6	0.0262	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) 1963 (241.0 / 117.0) 3631	(4.44, 0.90) (N/A, -0.02, 0.2)	90.0 43.7	1.8503 110.6 107.5	0.3444	N/A			
5:3FTCA	(341.0 / 236.7) 144209 (341.0 / 217.0) 216674	(6.77, 1.10) (N/A, 0.00, -0.1)	579.6 395.6	1.5025 102.6 97.0	2.9623	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 184339	(3.65, N/A) (N/A, -0.02, N/A)	661.3	N/A	1.3243 [1.0000]	132.4% { 113.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 286885	(6.13, N/A) (N/A, -0.01, N/A)	565.2	N/A	1.2424 [1.0000]	124.2% { 128.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 258613	(7.88, N/A) (N/A, -0.01, N/A)	589.6	N/A	1.1763 [1.0000]	117.6% { 106.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 216657	(8.62, N/A) (N/A, -0.01, N/A)	488.6	N/A	1.1700 [1.0000]	117.0% { 120.2% }			

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) 207239	(9.30, N/A) (N/A, -0.01, N/A)	391.5	N/A	1.1214 [1.0000]	112.1% { 103.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 479797	(8.01, N/A) (N/A, -0.01, N/A)	807.7	N/A	1.1885 [1.0000]	118.8% { 116.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 391837	(9.45, N/A) (N/A, -0.01, N/A)	491.1	N/A	1.2276 [1.0000]	122.8% { 116.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1393522	(3.65, N/A) (N/A, -0.02, N/A)	1088.8	N/A	7.3450 [8.0000]	91.8% { 111.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 752067	(4.96, N/A) (N/A, -0.02, N/A)	733.3	N/A	3.7676 [4.0000]	94.2% { 113.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 641588	(6.13, N/A) (N/A, 0.00, N/A)	664.6	N/A	1.9434 [2.0000]	97.2% { 121.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 525192	(7.07, N/A) (N/A, 0.00, N/A)	617.6	N/A	1.8236 [2.0000]	91.2% { 112.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 526999	(7.88, N/A) (N/A, -0.01, N/A)	820.0	N/A	1.8582 [2.0000]	92.9% { 103.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 207934	(8.62, N/A) (N/A, -0.01, N/A)	364.7	N/A	0.8728 [1.0000]	87.3% { 113.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 275189	(9.30, N/A) (N/A, -0.01, N/A)	425.2	N/A	0.9337 [1.0000]	93.4% { 109.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 309737	(9.71, N/A) (N/A, 0.00, N/A)	542.9	N/A	0.7388 [1.0000]	73.9% { 96.3% }			

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) 374061	(9.89, N/A) (N/A, -0.01, N/A)	694.3	N/A	0.8939 [1.0000]	89.4% { 101.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 200848	(10.13, N/A) (N/A, 0.01, N/A)	294.5	N/A	0.7227 [1.0000]	72.3% { 72.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1680647	(6.08, N/A) (N/A, -0.01, N/A)	728.5	N/A	2.0718 [2.0000]	103.6% { 119.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 819558	(8.00, N/A) (N/A, -0.01, N/A)	897.1	N/A	1.8988 [2.0000]	94.9% { 118.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 968355	(9.44, N/A) (N/A, -0.01, N/A)	390.9	N/A	1.4399 [2.0000]	72.0% { 91.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 296296	(5.79, N/A) (N/A, -0.01, N/A)	715.5	N/A	4.3124 [4.0000]	107.8% { 131.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 325594	(7.55, N/A) (N/A, 0.00, N/A)	685.3	N/A	3.9360 [4.0000]	98.4% { 113.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 231535	(8.96, N/A) (N/A, 0.00, N/A)	481.4	N/A	2.7960 [4.0000]	69.9% { 102.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1547032	(10.18, N/A) (N/A, 0.00, N/A)	786.9	N/A	1.8199 [2.0000]	91.0% { 109.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 192879	(10.61, N/A) (N/A, 0.00, N/A)	608.1	N/A	1.0392 [2.0000]	52.0% { 56.9% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 177794	(10.69, N/A) (N/A, 0.00, N/A)	799.7	N/A	1.0377 [2.0000]	51.9% { 59.0% }			

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) 548650	(9.50, N/A) (N/A, 0.00, N/A)	286.9	N/A	3.4309 [4.0000]	85.8% { 94.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 493861	(9.68, N/A) (N/A, 0.00, N/A)	404.6	N/A	3.5038 [4.0000]	87.6% { 109.3% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 336781	(10.57, N/A) (N/A, 0.00, N/A)	793.8	N/A	12.9230 [20.0000]	64.6% { 71.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 156442	(10.66, N/A) (N/A, 0.00, N/A)	1237.5	N/A	13.1862 [20.0000]	65.9% { 71.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1340392	(6.48, N/A) (N/A, -0.01, N/A)	915.4	N/A	7.6364 [8.0000]	95.5% { 110.3% }			

FORM I
ANALYSIS DATA SHEET
ADIT6-DU04B-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-09
		File ID:	S2022-12-21B (26)
Sampled:	12/02/22 11:05	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 23:58
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	106.8 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	66	7.5	3.7	0.98	
PFPEA	210	3.7	3.7	0.30	
PFHXA	93	1.9	1.9	0.26	
PFHPA	52	1.9	0.94	0.19	
PFOA	1.9	1.9	0.94	0.70	
PFNA	0.87 J	1.9	0.94	0.38	
PFDA	0.54 J	1.9	0.94	0.47	
PFUnA	0.94 U	1.9	0.94	0.75	
PFDOA	0.94 U	1.9	0.94	0.51	
PFTRDA	1.4 U	1.9	1.4	0.94	
PFTEDA	0.94 U	1.9	0.94	0.94	
PFBS	0.43 J	1.9	0.94	0.17	
PFPEs	0.94 U	1.9	0.94	0.29	
PFHXS	2.0	1.9	0.94	0.15	
PFHPS	0.94 U	1.9	0.94	0.24	
PFOS	25	1.9	0.94	0.30	
PFNS	0.94 U	1.9	0.94	0.56	
PFDS	0.94 U	1.9	0.94	0.70	
PFDOS	0.94 U	1.9	0.94	0.56	
4:2FTS	3.7 U	7.5	3.7	1.4	
6:2FTS	130	7.5	3.7	1.5	
8:2FTS	3.7 U	7.5	3.7	0.38	
PFOSA	1.6 J	1.9	0.94	0.47	
NMeFOSA	3.7 U	7.5	3.7	2.2	
NEtFOSA	3.7 U	7.5	3.7	1.9	
NMeFOSAA	0.94 U	1.9	0.94	0.51	
NEtFOSAA	0.94 U	1.9	0.94	0.51	
NMeFOSE	5.6 U	7.5	5.6	4.7	
NEtFOSE	5.6 U	7.5	5.6	4.7	
HFPO-DA	1.9 U	3.7	1.9	0.80	

FORM I
ANALYSIS DATA SHEET
ADIT6-DU04B-SON01MI-22DEC

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	22L0023-09
		File ID:	S2022-12-21B (26)
Sampled:	12/02/22 11:05	Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 23:58
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Initial/Final:	106.8 mL / 2 mL	Instrument:	Saphira
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	1.9 U	3.7	1.9	0.56	
PFEESA	1.9 U	3.7	1.9	0.51	
PFMPA	1.9 U	3.7	1.9	0.25	
PFMBA	1.9 U	3.7	1.9	0.43	
NFDHA	1.9 U	3.7	1.9	1.4	
9CL-PF3ONS	1.9 U	3.7	1.9	0.98	
11CL-PF3OUDS	1.9 U	3.7	1.9	0.98	
3:3FTCA	3.7 U	7.5	3.7	2.7	
5:3FTCA	2.5 J	7.5	3.7	2.1	
7:3FTCA	3.7 U	7.5	3.7	2.6	

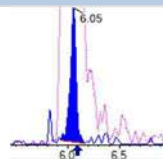
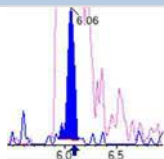
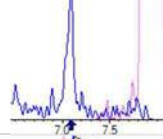
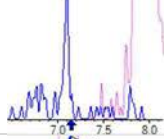
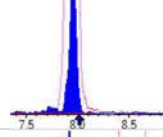
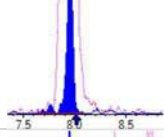
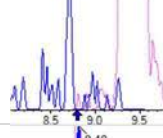
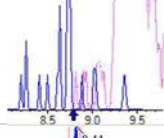
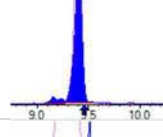
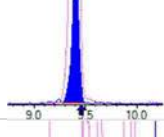
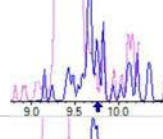
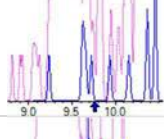
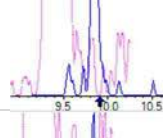
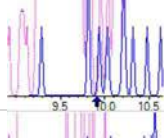
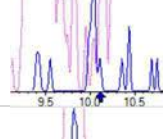
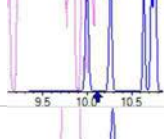
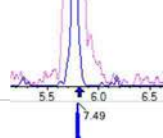
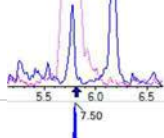
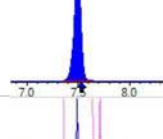
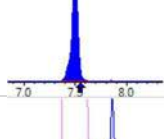
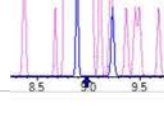
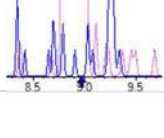


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-09
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (26)
 Acquired: 2022/12/21 - 23:58

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 344075	(3.65, 1.00) (0.00, N/A, 0.0)	66.6	N/A 0.0 0.0	3.5253	N/A			
PFPeA	(262.9 / 219.0) 1680893 (262.9 / 69.0) 19438	(4.96, 1.00) (0.00, N/A, 0.0)	797.5 222.1	0.0116 103.3 99.7	11.1231	N/A			
PFHxA	(313.0 / 269.0) 1208333 (313.0 / 119.0) 106698	(6.10, 1.00) (0.00, N/A, 0.0)	648.0 493.8	0.0883 90.3 95.2	4.9409	N/A			
PFHpA	(363.0 / 319.0) 644553 (363.0 / 169.0) 182838	(7.02, 1.00) (0.00, N/A, 0.0)	632.7 454.1	0.2837 91.1 91.0	2.7613	N/A			
PFOA	(413.0 / 369.0) 26475 (413.0 / 169.0) 9282	(7.84, 1.00) (0.01, N/A, 0.5)	68.5 68.4	0.3506 107.3 106.6	0.1028	N/A			
PFNA	(463.0 / 419.0) 8024 (463.0 / 169.0) 1957	(8.57, 1.00) (0.00, N/A, 0.9)	52.2 11.0	0.2439 126.5 106.3	0.0463	N/A			
PFDA	(513.0 / 469.0) 7260 (513.0 / 169.0) 784	(9.26, 1.00) (0.01, N/A, 0.3)	16.0 6096.3	0.1080 113.0 100.1	0.0289	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			

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) 8623 (298.9 / 99.0) 5090	(6.05, 1.00) (0.00, N/A, -0.3)	60.2 43.6	0.5903 95.9 94.5	0.0227	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) 63530 (399.0 / 99.0) 19259	(7.95, 1.00) (0.00, N/A, 0.1)	810.2 10743.1	0.3031 90.2 89.2	0.1052	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) 815124 (499.0 / 99.0) 210090	(9.40, 1.00) (0.00, N/A, -0.1)	170.0 218.1	0.2577 106.0 120.0	1.3501	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) 1018687 (427.0 / 81.0) 723665	(7.49, 1.00) (0.00, N/A, -0.2)	782.8 778.6	0.7104 91.3 109.7	6.7116	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			

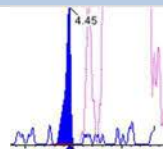
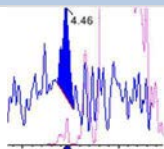
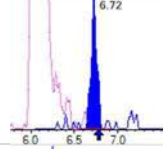
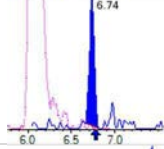
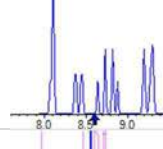
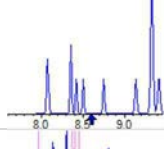
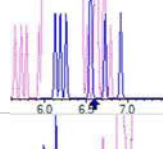
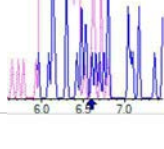
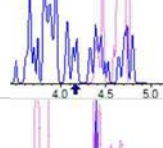
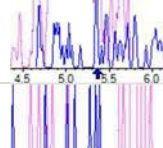
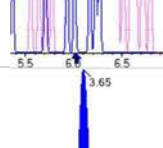
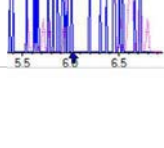
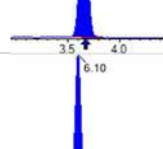
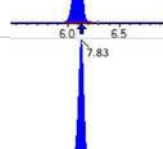
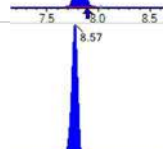



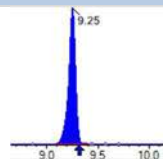
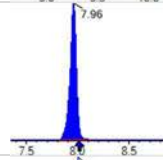
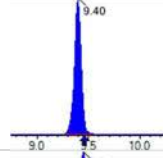
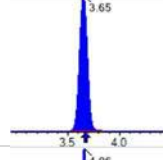
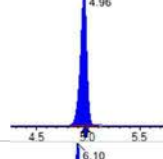
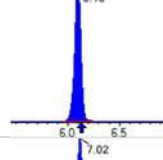
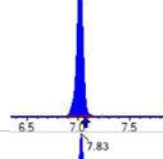
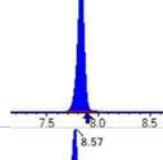
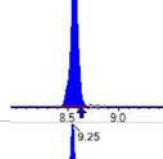
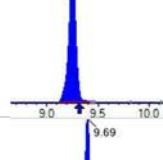
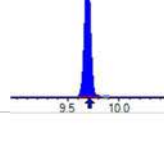
Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

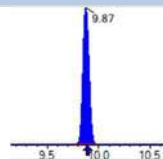
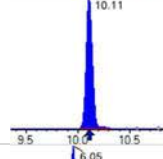
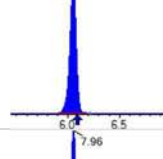
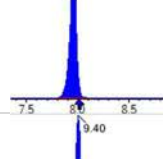
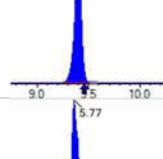
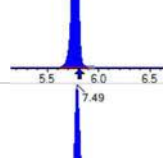
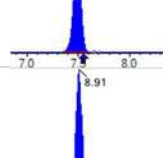
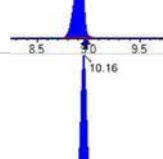
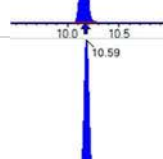
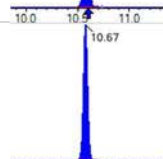

Sample I.D.: 22L0023-09
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (26)
Acquired: 2022/12/21 - 23:58

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 41827 (498.0 / 478.0) 631	(10.16 , 1.00) (0.00 , N/A , 1.6)	165.6 47349.8	0.0151 72.4 64.3	0.0839	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) 535 (241.0 / 117.0) 753	(4.45, 0.90) (N/A, 0.00, -0.3)	38.5 8.8	1.4080 84.1 81.8	0.1025	N/A			
5:3FTCA	(341.0 / 236.7) 5671 (341.0 / 217.0) 8616	(6.72, 1.10) (N/A, -0.05, -0.8)	52.8 55.8	1.5192 103.8 98.1	0.1312	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 164207	(3.65, N/A) (N/A, -0.02, N/A)	720.6	N/A	1.1797 [1.0000]	118.0% { 100.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 287612	(6.10, N/A) (N/A, -0.04, N/A)	600.1	N/A	1.2455 [1.0000]	124.6% { 128.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 289009	(7.83, N/A) (N/A, -0.06, N/A)	633.9	N/A	1.3146 [1.0000]	131.5% { 118.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 239200	(8.57, N/A) (N/A, -0.06, N/A)	471.0	N/A	1.2917 [1.0000]	129.2% { 132.7% }			

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_IIS	(515.1 / 470.1) 222384	(9.25, N/A) (N/A, -0.06, N/A)	412.9	N/A	1.2033 [1.0000]	120.3% { 111.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 506563	(7.96, N/A) (N/A, -0.05, N/A)	800.3	N/A	1.2548 [1.0000]	125.5% { 122.5% }			
13C4_PFOS_IIS	(502.8 / 79.9) 399477	(9.40, N/A) (N/A, -0.05, N/A)	456.6	N/A	1.2516 [1.0000]	125.2% { 118.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1196869	(3.65, N/A) (N/A, -0.02, N/A)	1055.6	N/A	7.0819 [8.0000]	88.5% { 95.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 688263	(4.96, N/A) (N/A, -0.02, N/A)	690.6	N/A	3.4393 [4.0000]	86.0% { 103.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 569517	(6.10, N/A) (N/A, -0.04, N/A)	632.9	N/A	1.7207 [2.0000]	86.0% { 107.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 512152	(7.02, N/A) (N/A, -0.05, N/A)	728.1	N/A	1.7738 [2.0000]	88.7% { 110.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 523833	(7.83, N/A) (N/A, -0.05, N/A)	728.6	N/A	1.6528 [2.0000]	82.6% { 102.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 201927	(8.57, N/A) (N/A, -0.06, N/A)	424.4	N/A	0.7677 [1.0000]	76.8% { 110.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 263697	(9.25, N/A) (N/A, -0.06, N/A)	321.0	N/A	0.8337 [1.0000]	83.4% { 105.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 300754	(9.69, N/A) (N/A, -0.03, N/A)	513.6	N/A	0.6685 [1.0000]	66.9% { 93.5% }			

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_EIS	(615.0 / 570.0) 281235	(9.87, N/A) (N/A, -0.02, N/A)	605.4	N/A	0.6263 [1.0000]	62.6% { 76.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 119525	(10.11, N/A) (N/A, -0.01, N/A)	325.3	N/A	0.4008 [1.0000]	40.1% { 43.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1383633	(6.05, N/A) (N/A, -0.04, N/A)	772.9	N/A	1.6155 [2.0000]	80.8% { 98.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 777551	(7.96, N/A) (N/A, -0.06, N/A)	1025.6	N/A	1.7063 [2.0000]	85.3% { 112.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1112458	(9.40, N/A) (N/A, -0.05, N/A)	470.9	N/A	1.6226 [2.0000]	81.1% { 104.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 317355	(5.77, N/A) (N/A, -0.03, N/A)	611.9	N/A	4.3748 [4.0000]	109.4% { 140.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 394866	(7.49, N/A) (N/A, -0.05, N/A)	799.4	N/A	4.5212 [4.0000]	113.0% { 137.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 321984	(8.91, N/A) (N/A, -0.06, N/A)	613.8	N/A	3.6828 [4.0000]	92.1% { 143.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1055222	(10.16, N/A) (N/A, -0.02, N/A)	733.5	N/A	1.2176 [2.0000]	60.9% { 74.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 123975	(10.59, N/A) (N/A, -0.02, N/A)	892.2	N/A	0.6552 [2.0000]	32.8% { 36.6% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 110384	(10.67, N/A) (N/A, -0.02, N/A)	1058.3	N/A	0.6319 [2.0000]	31.6% { 36.6% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0023-09
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (26)
 Acquired: 2022/12/21 - 23:58

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) 509811	(9.45, N/A) (N/A, -0.05, N/A)	382.4	N/A	3.1271 [4.0000]	78.2% { 87.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 522003	(9.65, N/A) (N/A, -0.03, N/A)	401.6	N/A	3.6326 [4.0000]	90.8% { 115.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 184810	(10.55, N/A) (N/A, -0.02, N/A)	880.5	N/A	6.9559 [20.0000]	34.8% { 39.4% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 77258	(10.65, N/A) (N/A, -0.02, N/A)	894.0	N/A	6.3874 [20.0000]	31.9% { 35.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1207921	(6.44, N/A) (N/A, -0.04, N/A)	575.9	N/A	6.8643 [8.0000]	85.8% { 99.4% }			

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-IDW-SON01MI-22DEC (22L0023-01) . ng/L				
		Lab File ID: S2022-12-21B (10)		Analyzed: 12/21/22 20:35
13C4-PFBA	149	93.7	20 - 150	
13C5-PFPEA	74.4	97.0	20 - 150	
13C5-PFHXA	37.2	95.9	20 - 150	
13C4-PFHPA	37.2	86.1	20 - 150	
13C8-PFOA	37.2	86.1	20 - 150	
13C9-PFNA	18.6	92.3	20 - 150	
13C6-PFDA	18.6	84.7	20 - 150	
13C7-PFUnA	18.6	41.4	20 - 150	
13C2-PFDOA	18.6	79.8	20 - 150	
13C2-PFTEDA	18.6	62.3	20 - 150	
13C3-PFBS	37.2	117	20 - 150	
13C3-PFHXS	37.2	90.5	20 - 150	
13C8-PFOS	37.2	98.9	20 - 150	
13C2-4:2FTS	74.4	141	20 - 150	
13C2-6:2FTS	74.4	121	20 - 150	
13C2-8:2FTS	74.4	25.9	20 - 150	
13C8-PFOSA	37.2	81.0	20 - 150	
D5-NETFOSA	37.2	50.5	20 - 150	
D3-NMEFOSA	37.2	54.2	20 - 150	
D3-NMEFOSAA	74.4	129	20 - 150	
D5-NETFOSAA	74.4	94.8	20 - 150	
D7-NMEFOSE	372	96.1	20 - 150	
D9-NETFOSE	372	89.2	20 - 150	
13C3-HFPO-DA	149	92.9	20 - 150	
ADIT6-IDW-SON01MI-22DEC (22L0023-01RE1) . ng/L				
		Lab File ID: S2022-12-21B (11)		Analyzed: 12/21/22 20:47
13C2-6:2FTS	74.4	138	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-IDW-SOFD01MI-22DEC (22L0023-02) . ng/L				
		Lab File ID: S2022-12-21B (12)		Analyzed: 12/21/22 21:00
13C4-PFBA	152	94.3	20 - 150	
13C5-PFPEA	76.2	94.7	20 - 150	
13C5-PFHXA	38.1	94.0	20 - 150	
13C4-PFHPA	38.1	85.6	20 - 150	
13C8-PFOA	38.1	91.6	20 - 150	
13C9-PFNA	19.0	97.7	20 - 150	
13C6-PFDA	19.0	85.0	20 - 150	
13C7-PFUnA	19.0	43.3	20 - 150	
13C2-PFDOA	19.0	97.6	20 - 150	
13C2-PFTEDA	19.0	50.7	20 - 150	
13C3-PFBS	38.1	121	20 - 150	
13C3-PFHXS	38.1	85.5	20 - 150	
13C8-PFOS	38.1	103	20 - 150	
13C2-4:2FTS	76.2	169	20 - 150	*
13C2-6:2FTS	76.2	120	20 - 150	
13C2-8:2FTS	76.2	32.9	20 - 150	
13C8-PFOSA	38.1	107	20 - 150	
D5-NETFOSA	38.1	64.1	20 - 150	
D3-NMEFOSA	38.1	67.4	20 - 150	
D3-NMEFOSAA	76.2	151	20 - 150	*
D5-NETFOSAA	76.2	104	20 - 150	
D7-NMEFOSE	381	109	20 - 150	
D9-NETFOSSE	381	108	20 - 150	
13C3-HFPO-DA	152	97.0	20 - 150	
ADIT6-IDW-SOFD01MI-22DEC (22L0023-02RE1) . ng/L				
		Lab File ID: S2022-12-21B (13)		Analyzed: 12/21/22 21:13
13C2-4:2FTS	76.2	96.6	20 - 150	
13C2-6:2FTS	76.2	170	20 - 150	*
D3-NMEFOSAA	76.2	94.4	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-IDW-SOFT01MI-22DEC (22L0023-03) . ng/L				
		Lab File ID: S2022-12-21B (14)		Analyzed: 12/21/22 21:25
13C4-PFBA	148	98.9	20 - 150	
13C5-PFPEA	73.8	96.0	20 - 150	
13C5-PFHXA	36.9	93.5	20 - 150	
13C4-PFHPA	36.9	86.5	20 - 150	
13C8-PFOA	36.9	92.7	20 - 150	
13C9-PFNA	18.5	88.8	20 - 150	
13C6-PFDA	18.5	83.2	20 - 150	
13C7-PFUnA	18.5	40.5	20 - 150	
13C2-PFDOA	18.5	70.5	20 - 150	
13C2-PFTEDA	18.5	58.0	20 - 150	
13C3-PFBS	36.9	116	20 - 150	
13C3-PFHXS	36.9	91.7	20 - 150	
13C8-PFOS	36.9	102	20 - 150	
13C2-4:2FTS	73.8	162	20 - 150	*
13C2-6:2FTS	73.8	123	20 - 150	
13C2-8:2FTS	73.8	35.0	20 - 150	
13C8-PFOSA	36.9	91.8	20 - 150	
D5-NETFOSA	36.9	52.2	20 - 150	
D3-NMEFOSA	36.9	50.0	20 - 150	
D3-NMEFOSAA	73.8	111	20 - 150	
D5-NETFOSAA	73.8	108	20 - 150	
D7-NMEFOSE	369	97.3	20 - 150	
D9-NETFOSSE	369	90.3	20 - 150	
13C3-HFPO-DA	148	91.9	20 - 150	
ADIT6-IDW-SOFT01MI-22DEC (22L0023-03RE1) . ng/L				
		Lab File ID: S2022-12-21B (15)		Analyzed: 12/21/22 21:38
13C2-4:2FTS	73.8	97.0	20 - 150	
13C2-6:2FTS	73.8	165	20 - 150	*

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-DU02-SON01MI-22DEC (22L0023-04) . ng/L		Lab File ID: S2022-12-21B (16)		Analyzed: 12/21/22 21:51
13C4-PFBA	147	92.0	20 - 150	
13C5-PFPEA	73.3	92.0	20 - 150	
13C5-PFHXA	36.7	81.0	20 - 150	
13C4-PFHFA	36.7	75.7	20 - 150	
13C8-PFOA	36.7	86.5	20 - 150	
13C9-PFNA	18.3	92.6	20 - 150	
13C6-PFDA	18.3	86.2	20 - 150	
13C7-PFUnA	18.3	22.8	20 - 150	
13C2-PFDOA	18.3	79.9	20 - 150	
13C2-PFTEDA	18.3	54.7	20 - 150	
13C3-PFBS	36.7	128	20 - 150	
13C3-PFHXS	36.7	88.3	20 - 150	
13C8-PFOS	36.7	102	20 - 150	
13C2-4:2FTS	73.3	174	20 - 150	*
13C2-6:2FTS	73.3	103	20 - 150	
13C2-8:2FTS	73.3	8.84	20 - 150	*
13C8-PFOSA	36.7	56.0	20 - 150	
D5-NETFOSA	36.7	71.4	20 - 150	
D3-NMEFOSA	36.7	64.9	20 - 150	
D3-NMEFOSAA	73.3	196	20 - 150	*
D5-NETFOSAA	73.3	124	20 - 150	
D7-NMEFOSE	367	135	20 - 150	
D9-NETFOSSE	367	118	20 - 150	
13C3-HFPO-DA	147	85.2	20 - 150	
ADIT6-DU02-SON01MI-22DEC (22L0023-04RE1) . ng/L		Lab File ID: S2022-12-21B (17)		Analyzed: 12/21/22 22:03
13C2-4:2FTS	73.3	103	20 - 150	
13C2-6:2FTS	73.3	160	20 - 150	*
13C2-8:2FTS	73.3	48.8	20 - 150	
D3-NMEFOSAA	73.3	101	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-DU02-SOFD01MI-22DEC (22L0023-05) . ng/L		Lab File ID: S2022-12-21B (18)		Analyzed: 12/21/22 22:16
13C4-PFBA	149	95.7	20 - 150	
13C5-PFPEA	74.4	108	20 - 150	
13C5-PFHXA	37.2	89.5	20 - 150	
13C4-PFHFA	37.2	82.1	20 - 150	
13C8-PFOA	37.2	90.0	20 - 150	
13C9-PFNA	18.6	82.1	20 - 150	
13C6-PFDA	18.6	73.8	20 - 150	
13C7-PFUnA	18.6	26.8	20 - 150	
13C2-PFDOA	18.6	72.8	20 - 150	
13C2-PFTEDA	18.6	44.8	20 - 150	
13C3-PFBS	37.2	128	20 - 150	
13C3-PFHXS	37.2	89.9	20 - 150	
13C8-PFOS	37.2	95.7	20 - 150	
13C2-4:2FTS	74.4	180	20 - 150	*
13C2-6:2FTS	74.4	87.3	20 - 150	
13C2-8:2FTS	74.4	10.9	20 - 150	*
13C8-PFOSA	37.2	50.1	20 - 150	
D5-NETFOSA	37.2	61.9	20 - 150	
D3-NMEFOSA	37.2	63.0	20 - 150	
D3-NMEFOSAA	74.4	193	20 - 150	*
D5-NETFOSAA	74.4	116	20 - 150	
D7-NMEFOSE	372	122	20 - 150	
D9-NETFOSSE	372	118	20 - 150	
13C3-HFPO-DA	149	93.6	20 - 150	
ADIT6-DU02-SOFD01MI-22DEC (22L0023-05RE1) . ng/L		Lab File ID: S2022-12-21B (19)		Analyzed: 12/21/22 22:29
13C5-PFHXA	37.2	92.2	20 - 150	
13C2-4:2FTS	74.4	121	20 - 150	
13C2-6:2FTS	74.4	194	20 - 150	*
13C2-8:2FTS	74.4	38.6	20 - 150	
D3-NMEFOSAA	74.4	83.6	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-DU02-SOFT01MI-22DEC (22L0023-06) ng/L		Lab File ID: S2022-12-21B (20)		Analyzed: 12/21/22 22:42
13C4-PFBA	146	91.5	20 - 150	
13C5-PFPEA	72.9	90.8	20 - 150	
13C5-PFHXA	36.4	82.3	20 - 150	
13C4-PFHPA	36.4	82.1	20 - 150	
13C8-PFOA	36.4	81.2	20 - 150	
13C9-PFNA	18.2	80.0	20 - 150	
13C6-PFDA	18.2	67.7	20 - 150	
13C7-PFUnA	18.2	38.9	20 - 150	
13C2-PFDOA	18.2	75.3	20 - 150	
13C2-PFTEDA	18.2	43.4	20 - 150	
13C3-PFBS	36.4	106	20 - 150	
13C3-PFHXS	36.4	82.3	20 - 150	
13C8-PFOS	36.4	93.6	20 - 150	
13C2-4:2FTS	72.9	137	20 - 150	
13C2-6:2FTS	72.9	122	20 - 150	
13C2-8:2FTS	72.9	17.7	20 - 150	*
13C8-PFOSA	36.4	67.3	20 - 150	
D5-NETFOSA	36.4	37.7	20 - 150	
D3-NMEFOSA	36.4	41.3	20 - 150	
D3-NMEFOSAA	72.9	128	20 - 150	
D5-NETFOSAA	72.9	110	20 - 150	
D7-NMEFOSE	364	87.7	20 - 150	
D9-NETFOSSE	364	86.8	20 - 150	
13C3-HFPO-DA	146	85.5	20 - 150	
ADIT6-DU02-SOFT01MI-22DEC (22L0023-06RE1) ng/L		Lab File ID: S2022-12-21B (21)		Analyzed: 12/21/22 22:54
13C2-6:2FTS	72.9	135	20 - 150	
13C2-8:2FTS	72.9	57.2	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-DU04A-SON01MI-22DEC (22L0023-07) . ng/L		Lab File ID: S2022-12-21B (22)		Analyzed: 12/21/22 23:07
13C4-PFBA	147	89.6	20 - 150	
13C5-PFPEA	73.4	89.4	20 - 150	
13C5-PFHXA	36.7	81.0	20 - 150	
13C4-PFHFA	36.7	86.1	20 - 150	
13C8-PFOA	36.7	89.4	20 - 150	
13C9-PFNA	18.3	86.9	20 - 150	
13C6-PFDA	18.3	74.5	20 - 150	
13C7-PFUnA	18.3	66.1	20 - 150	
13C2-PFDOA	18.3	59.0	20 - 150	
13C2-PFTEDA	18.3	39.3	20 - 150	
13C3-PFBS	36.7	90.5	20 - 150	
13C3-PFHXS	36.7	83.1	20 - 150	
13C8-PFOS	36.7	81.4	20 - 150	
13C2-4:2FTS	73.4	119	20 - 150	
13C2-6:2FTS	73.4	97.9	20 - 150	
13C2-8:2FTS	73.4	92.9	20 - 150	
13C8-PFOSA	36.7	74.1	20 - 150	
D5-NETFOSA	36.7	39.1	20 - 150	
D3-NMEFOSA	36.7	40.1	20 - 150	
D3-NMEFOSAA	73.4	89.0	20 - 150	
D5-NETFOSAA	73.4	88.4	20 - 150	
D7-NMEFOSE	367	39.8	20 - 150	
D9-NETFOSE	367	42.7	20 - 150	
13C3-HFPO-DA	147	89.4	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-DU01-SON01MI-22DEC (22L0023-08) . ng/L	Lab File ID: S2022-12-21B (24)			Analyzed: 12/21/22 23:32
13C4-PFBA	148	91.8	20 - 150	
13C5-PFPEA	73.8	94.2	20 - 150	
13C5-PFHXA	36.9	97.2	20 - 150	
13C4-PFHFA	36.9	91.2	20 - 150	
13C8-PFOA	36.9	92.9	20 - 150	
13C9-PFNA	18.5	87.3	20 - 150	
13C6-PFDA	18.5	93.4	20 - 150	
13C7-PFUnA	18.5	73.9	20 - 150	
13C2-PFDOA	18.5	89.4	20 - 150	
13C2-PFTEDA	18.5	72.3	20 - 150	
13C3-PFBS	36.9	104	20 - 150	
13C3-PFHXS	36.9	94.9	20 - 150	
13C8-PFOS	36.9	72.0	20 - 150	
13C2-4:2FTS	73.8	108	20 - 150	
13C2-6:2FTS	73.8	98.4	20 - 150	
13C2-8:2FTS	73.8	69.9	20 - 150	
13C8-PFOSA	36.9	91.0	20 - 150	
D5-NETFOSA	36.9	51.9	20 - 150	
D3-NMEFOSA	36.9	52.0	20 - 150	
D3-NMEFOSAA	73.8	85.8	20 - 150	
D5-NETFOSAA	73.8	87.6	20 - 150	
D7-NMEFOSE	369	64.6	20 - 150	
D9-NETFOSE	369	65.9	20 - 150	
13C3-HFPO-DA	148	95.5	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
ADIT6-DU04B-SON01MI-22DEC (22L0023-09) . ng/L	Lab File ID: S2022-12-21B (26)			Analyzed: 12/21/22 23:58
13C4-PFBA	150	88.5	20 - 150	
13C5-PFPEA	74.9	86.0	20 - 150	
13C5-PFHXA	37.5	86.0	20 - 150	
13C4-PFHPA	37.5	88.7	20 - 150	
13C8-PFOA	37.5	82.6	20 - 150	
13C9-PFNA	18.7	76.8	20 - 150	
13C6-PFDA	18.7	83.4	20 - 150	
13C7-PFUnA	18.7	66.9	20 - 150	
13C2-PFDOA	18.7	62.6	20 - 150	
13C2-PFTEDA	18.7	40.1	20 - 150	
13C3-PFBS	37.5	80.8	20 - 150	
13C3-PFHXS	37.5	85.3	20 - 150	
13C8-PFOS	37.5	81.1	20 - 150	
13C2-4:2FTS	74.9	109	20 - 150	
13C2-6:2FTS	74.9	113	20 - 150	
13C2-8:2FTS	74.9	92.1	20 - 150	
13C8-PFOSA	37.5	60.9	20 - 150	
D5-NETFOSA	37.5	31.6	20 - 150	
D3-NMEFOSA	37.5	32.8	20 - 150	
D3-NMEFOSAA	74.9	78.2	20 - 150	
D5-NETFOSAA	74.9	90.8	20 - 150	
D7-NMEFOSE	375	34.8	20 - 150	
D9-NETFOSE	375	31.9	20 - 150	
13C3-HFPO-DA	150	85.8	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BBL0372-BLK1) . ng/L	Lab File ID: S2022-12-21B (7)			Analyzed: 12/21/22 19:57
13C4-PFBA	160	94.4	20 - 150	
13C5-PFPEA	80.0	90.8	20 - 150	
13C5-PFHXA	40.0	87.4	20 - 150	
13C4-PFHPA	40.0	86.2	20 - 150	
13C8-PFOA	40.0	85.7	20 - 150	
13C9-PFNA	20.0	75.8	20 - 150	
13C6-PFDA	20.0	86.4	20 - 150	
13C7-PFUnA	20.0	66.8	20 - 150	
13C2-PFDOA	20.0	76.9	20 - 150	
13C2-PFTEDA	20.0	82.4	20 - 150	
13C3-PFBS	40.0	90.5	20 - 150	
13C3-PFHXS	40.0	82.1	20 - 150	
13C8-PFOS	40.0	75.7	20 - 150	
13C2-4:2FTS	80.0	82.2	20 - 150	
13C2-6:2FTS	80.0	73.6	20 - 150	
13C2-8:2FTS	80.0	79.8	20 - 150	
13C8-PFOSA	40.0	77.8	20 - 150	
D5-NETFOSA	40.0	21.6	20 - 150	
D3-NMEFOSA	40.0	24.9	20 - 150	
D3-NMEFOSAA	80.0	78.6	20 - 150	
D5-NETFOSAA	80.0	85.2	20 - 150	
D7-NMEFOSE	400	47.2	20 - 150	
D9-NETFOSE	400	41.2	20 - 150	
13C3-HFPO-DA	160	83.8	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BBL0372-BS1) . ng/L	Lab File ID: S2022-12-21B (8)			Analyzed: 12/21/22 20:09
13C4-PFBA	160	90.9	20 - 150	
13C5-PFPEA	80.0	94.5	20 - 150	
13C5-PFHXA	40.0	86.1	20 - 150	
13C4-PFHPA	40.0	89.1	20 - 150	
13C8-PFOA	40.0	87.2	20 - 150	
13C9-PFNA	20.0	89.9	20 - 150	
13C6-PFDA	20.0	80.8	20 - 150	
13C7-PFUnA	20.0	78.6	20 - 150	
13C2-PFDOA	20.0	68.7	20 - 150	
13C2-PFTEDA	20.0	68.2	20 - 150	
13C3-PFBS	40.0	89.4	20 - 150	
13C3-PFHXS	40.0	81.4	20 - 150	
13C8-PFOS	40.0	69.7	20 - 150	
13C2-4:2FTS	80.0	86.3	20 - 150	
13C2-6:2FTS	80.0	80.1	20 - 150	
13C2-8:2FTS	80.0	73.9	20 - 150	
13C8-PFOSA	40.0	76.3	20 - 150	
D5-NETFOSA	40.0	18.3	20 - 150	*
D3-NMEFOSA	40.0	22.5	20 - 150	
D3-NMEFOSAA	80.0	68.1	20 - 150	
D5-NETFOSAA	80.0	66.1	20 - 150	
D7-NMEFOSE	400	41.3	20 - 150	
D9-NETFOSE	400	37.0	20 - 150	
13C3-HFPO-DA	160	91.9	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633 SPLP

Client: AECOM
 Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BBL0372-MRL1) . ng/L	Lab File ID: S2022-12-21B (9)			Analyzed: 12/21/22 20:22
13C4-PFBA	160	91.8	20 - 150	
13C5-PFPEA	80.0	91.0	20 - 150	
13C5-PFHXA	40.0	88.5	20 - 150	
13C4-PFHPA	40.0	91.5	20 - 150	
13C8-PFOA	40.0	86.0	20 - 150	
13C9-PFNA	20.0	76.0	20 - 150	
13C6-PFDA	20.0	73.3	20 - 150	
13C7-PFUnA	20.0	71.8	20 - 150	
13C2-PFDOA	20.0	81.5	20 - 150	
13C2-PFTEDA	20.0	85.1	20 - 150	
13C3-PFBS	40.0	78.5	20 - 150	
13C3-PFHXS	40.0	79.2	20 - 150	
13C8-PFOS	40.0	79.5	20 - 150	
13C2-4:2FTS	80.0	87.0	20 - 150	
13C2-6:2FTS	80.0	81.0	20 - 150	
13C2-8:2FTS	80.0	72.9	20 - 150	
13C8-PFOSA	40.0	73.5	20 - 150	
D5-NETFOSA	40.0	24.5	20 - 150	
D3-NMEFOSA	40.0	28.2	20 - 150	
D3-NMEFOSAA	80.0	76.3	20 - 150	
D5-NETFOSAA	80.0	73.8	20 - 150	
D7-NMEFOSE	400	49.7	20 - 150	
D9-NETFOSE	400	47.2	20 - 150	
13C3-HFPO-DA	160	89.9	20 - 150	

METHOD BLANK SUMMARY

EPA 1633 SPLP

Laboratory:	APPL, LLC	Work Order:	22L0023		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Blank ID:	BBL0372-BLK1	Batch:	BBL0372	Prepared:	12/19/2022 12:22

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BBL0372-BS1	S2022-12-21B (8)	20:09
MRL Check	BBL0372-MRL1	S2022-12-21B (9)	20:22
ADIT6-IDW-SON01MI-22DEC	22L0023-01	S2022-12-21B (10)	20:35
DF 10	22L0023-01RE1	S2022-12-21B (11)	20:47
ADIT6-IDW-SOFD01MI-22DEC	22L0023-02	S2022-12-21B (12)	21:00
DF 10	22L0023-02RE1	S2022-12-21B (13)	21:13
ADIT6-IDW-SOFT01MI-22DEC	22L0023-03	S2022-12-21B (14)	21:25
DF 10	22L0023-03RE1	S2022-12-21B (15)	21:38
ADIT6-DU02-SON01MI-22DEC	22L0023-04	S2022-12-21B (16)	21:51
DF 10	22L0023-04RE1	S2022-12-21B (17)	22:03
ADIT6-DU02-SOFD01MI-22DEC	22L0023-05	S2022-12-21B (18)	22:16
DF 10	22L0023-05RE1	S2022-12-21B (19)	22:29
ADIT6-DU02-SOFT01MI-22DEC	22L0023-06	S2022-12-21B (20)	22:42
DF 10	22L0023-06RE1	S2022-12-21B (21)	22:54
ADIT6-DU04A-SON01MI-22DEC	22L0023-07	S2022-12-21B (22)	23:07
ADIT6-DU01-SON01MI-22DEC	22L0023-08	S2022-12-21B (24)	23:32
ADIT6-DU04B-SON01MI-22DEC	22L0023-09	S2022-12-21B (26)	23:58

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	BBL0372-BLK1
Sampled:		File ID:	S2022-12-21B (7)
		Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 19:57
Solids:		Preparation:	PFAS Leachates
		Dilution:	1
Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011
		Instrument:	Saphira
Column:	1		

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	4.0 U	8.0	4.0	1.0	U
PFPEA	4.0 U	4.0	4.0	0.32	U
PFHXA	2.0 U	2.0	2.0	0.28	U
PFHPA	1.0 U	2.0	1.0	0.20	U
PFOA	1.0 U	2.0	1.0	0.75	IR2, U
PFNA	1.0 U	2.0	1.0	0.41	U
PFDA	1.0 U	2.0	1.0	0.50	U
PFUnA	1.0 U	2.0	1.0	0.80	U
PFDOA	1.0 U	2.0	1.0	0.55	U
PFTRDA	1.5 U	2.0	1.5	1.0	U
PFTEDA	1.0 U	2.0	1.0	1.0	U
PFBS	1.0 U	2.0	1.0	0.18	U
PFPEs	1.0 U	2.0	1.0	0.32	U
PFHXS	1.0 U	2.0	1.0	0.16	U
PFHPS	1.0 U	2.0	1.0	0.26	U
PFOS	0.604 J	2.0	1.0	0.32	J
PFNS	1.0 U	2.0	1.0	0.60	U
PFDS	1.0 U	2.0	1.0	0.75	U
PFDOS	1.0 U	2.0	1.0	0.60	U
4:2FTS	4.0 U	8.0	4.0	1.4	U
6:2FTS	4.0 U	8.0	4.0	1.6	U
8:2FTS	4.0 U	8.0	4.0	0.41	U
PFOSA	1.0 U	2.0	1.0	0.50	U
NMeFOSA	4.0 U	8.0	4.0	2.4	U
NEtFOSA	4.0 U	8.0	4.0	2.0	U
NMeFOSAA	1.0 U	2.0	1.0	0.55	U
NEtFOSAA	1.0 U	2.0	1.0	0.55	U
NMeFOSE	6.0 U	8.0	6.0	5.0	U
NEtFOSE	6.0 U	8.0	6.0	5.0	U
HFPO-DA	2.0 U	4.0	2.0	0.85	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	BBL0372-BLK1
Sampled:		File ID:	S2022-12-21B (7)
		Prepared:	12/19/22 12:22
Solids:		Analyzed:	12/21/22 19:57
		Preparation:	PFAS Leachates
Batch:	BBL0372	Dilution:	1
Column:	1	Sequence:	SB03942
		Calibration:	2252011
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	2.0 U	4.0	2.0	0.60	U
PFEESA	2.0 U	4.0	2.0	0.55	U
PFMPA	2.0 U	4.0	2.0	0.27	U
PFMBA	2.0 U	4.0	2.0	0.46	U
NFDHA	2.0 U	4.0	2.0	1.5	U
9CL-PF3ONS	2.0 U	4.0	2.0	1.0	U
11CL-PF3OUDS	2.0 U	4.0	2.0	1.0	U
3:3FTCA	4.0 U	8.0	4.0	2.8	U
5:3FTCA	4.0 U	8.0	4.0	2.2	U
7:3FTCA	4.0 U	8.0	4.0	2.8	U

LCS / LCS DUPLICATE RECOVERY**EPA 1633 SPLP**

Laboratory: APPL, LLC

Work Order: 22L0023

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Solid

Preparation: PFAS Leachates

Batch: BBL0372

Laboratory ID: BBL0372-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
PFBA	80.0	79.8	99.7	40 - 150
PFPEA	40.0	39.7	99.3	40 - 150
PFHXA	20.0	20.9	105	40 - 150
PFHPA	20.0	19.3	96.7	40 - 150
PFOA	20.0	19.6	98.0	40 - 150
PFNA	20.0	21.7	109	40 - 150
PFDA	20.0	19.3	96.5	40 - 150
PFUnA	20.0	19.4	96.8	40 - 150
PFDOA	20.0	21.4	107	40 - 150
PFTRDA	20.0	20.5	102	40 - 150
PFTEDA	20.0	21.9	109	40 - 150
PFBS	17.7	18.7	106	40 - 150
PFPEs	18.8	20.5	109	40 - 150
PFHXS	18.3	19.1	104	40 - 150
PFHPS	19.1	21.1	111	40 - 150
PFOS	18.6	19.8	106	40 - 150
PFNS	19.2	19.3	100	40 - 150
PFDS	19.3	19.0	98.3	40 - 150
PFDOS	19.4	20.3	104	40 - 150
4:2FTS	75.0	76.8	102	40 - 150
6:2FTS	76.0	81.0	107	40 - 150
8:2FTS	76.8	77.3	101	40 - 150
PFOSA	20.0	20.5	103	40 - 150
NMeFOSA	80.0	87.1	109	40 - 150
NEtFOSA	80.0	91.7	115	40 - 150
NMeFOSAA	20.0	23.5	117	40 - 150
NEtFOSAA	20.0	23.3	116	40 - 150
NMeFOSE	80.0	71.2	89.0	40 - 150
NEtFOSE	80.0	58.1	72.6	40 - 150
HFPO-DA	40.0	37.4	93.6	40 - 150
ADONA	37.8	35.7	94.4	40 - 150
PFEESA	35.6	36.6	103	40 - 150
PFMPA	40.0	40.7	102	40 - 150
PFMBA	40.0	36.6	91.6	40 - 150

LCS / LCS DUPLICATE RECOVERY**EPA 1633 SPLP**

Laboratory: APPL, LLC

Work Order: 22L0023

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Solid

Preparation: PFAS Leachates

Batch: BBL0372

Laboratory ID: BBL0372-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
NFDHA	40.0	44.2	110	40 - 150
9CL-PF3ONS	37.4	29.5	79.0	40 - 150
11CL-PF3OUDS	37.8	29.1	76.9	40 - 150
3:3FTCA	80.0	77.0	96.2	40 - 150
5:3FTCA	80.0	80.7	101	40 - 150
7:3FTCA	80.0	82.3	103	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 = 0.32619 x (std. dev. = 0.01628) (weighting: None)	%RSE=5.0
PFPeA	(262.9 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.43913 x (std. dev. = 0.01863) (weighting: None)	%RSE=4.2
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.42941 x (std. dev. = 0.01769) (weighting: None)	%RSE=4.1
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.45577 x (std. dev. = 0.01668) (weighting: None)	%RSE=3.7
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.49169 x (std. dev. = 0.02929) (weighting: None)	%RSE=6.0
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.85807 x (std. dev. = 0.06798) (weighting: None)	%RSE=7.9
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 0.95185 x (std. dev. = 0.07020) (weighting: None)	%RSE=7.4
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.79028 x (std. dev. = 0.12920) (weighting: None)	%RSE=16.3
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.86208 x (std. dev. = 0.12117) (weighting: None)	%RSE=14.1
PFTTrDA	(663.0 / 619.0)	13C2_PFTTrDA_EIS	1.0000	1.0000	y = 0.74691 x (std. dev. = 0.10467) (weighting: None)	%RSE=14.0
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.88627 x (std. dev. = 0.09361) (weighting: None)	%RSE=10.6
PFBS	(298.9 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.24253 x (std. dev. = 0.01275) (weighting: None)	%RSE=5.3
PFPeS	(349.0 / 80.0)	13C3_PFPeS_EIS	1.0000	0.9384	y = 0.83819 x (std. dev. = 0.04088) (weighting: None)	%RSE=4.9
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.70765 x (std. dev. = 0.03393) (weighting: None)	%RSE=4.8
PFHpS	(449.0 / 80.0)	13C8_PFOA_EIS	1.0000	0.9514	y = 0.41508 x (std. dev. = 0.03452) (weighting: None)	%RSE=8.3
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.50337 x (std. dev. = 0.03410) (weighting: None)	%RSE=6.8
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.57789 x (std. dev. = 0.04314) (weighting: None)	%RSE=7.5
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.64371 x (std. dev. = 0.05256) (weighting: None)	%RSE=8.2
PFDoS	(698.9 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.27084 x (std. dev. = 0.02152) (weighting: None)	%RSE=7.9
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 3.09002 x (std. dev. = 0.26815) (weighting: None)	%RSE=8.7
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.45919 x (std. dev. = 0.11873) (weighting: None)	%RSE=8.1
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.51823 x (std. dev. = 0.27229) (weighting: None)	%RSE=17.9
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.47254 x (std. dev. = 0.03538) (weighting: None)	%RSE=7.5
NMeFOSA	(511.9 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.63031 x (std. dev. = 0.18278) (weighting: None)	%RSE=11.2
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 1.80404 x (std. dev. = 0.10773) (weighting: None)	%RSE=6.0
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.19482 x (std. dev. = 0.02187) (weighting: None)	%RSE=11.2
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22445 x (std. dev. = 0.03244) (weighting: None)	%RSE=14.5
NMeFOSE	(616.1 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.25244 x (std. dev. = 0.02362) (weighting: None)	%RSE=9.4
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.10241 x (std. dev. = 0.01427) (weighting: None)	%RSE=13.9
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.15195 x (std. dev. = 0.00913) (weighting: None)	%RSE=6.0
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.63625 x (std. dev. = 0.02798) (weighting: None)	%RSE=4.4
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = -0.01255 x ² + 1.77065 x + 0.01174 (r = 0.99899) (weighting: 1 / x ²)	%RSE=4.6
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 0.88975 x (std. dev. = 0.09345) (weighting: None)	%RSE=10.5
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.03031 x (std. dev. = 0.00217) (weighting: None)	%RSE=7.2
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.30350 x (std. dev. = 0.02546) (weighting: None)	%RSE=8.4
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.34922 x (std. dev. = 0.01514) (weighting: None)	%RSE=4.3
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.83914 x (std. dev. = 0.06120) (weighting: None)	%RSE=7.3
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.12052 x (std. dev. = 0.00587) (weighting: None)	%RSE=4.9
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.41658 x (std. dev. = 0.00844) (weighting: None)	%RSE=2.0
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.43305 x (std. dev. = 0.01639) (weighting: None)	%RSE=3.8
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 139193.5476 x	%RSD=8.2
13C2_PFHxA_IIS	(315.1 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 230918.4261 x	%RSD=8.2
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 219848.0773 x	%RSD=7.7
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 185181.4072 x	%RSD=9.2
13C2_PFDA_IIS	(515.1 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 184809.0456 x	%RSD=11.0
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 403709.6695 x	%RSD=4.9
13C4_PFOS_IIS	(502.8 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 319178.8209 x	%RSD=6.9

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBa_EIS	(217.0 / 172.0)	13C3_PFBa_IIS	8.0000	1.0000	y = 8.2337 x	%RSD=3.2
13C5_PFPaA_EIS	(267.9 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 2.7832 x	%RSD=7.7
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.3015 x	%RSD=6.9
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.0078 x	%RSD=6.4
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 2.1933 x	%RSD=5.9
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 1.0996 x	%RSD=3.4
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.4222 x	%RSD=14.3
13C7_PFUaA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 2.0230 x	%RSD=15.9
13C2_PFDaA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 2.0192 x	%RSD=15.8
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3410 x	%RSD=16.6
13C3_PFBs_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.3815 x	%RSD=8.1
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.7992 x	%RSD=5.5
13C8_PFOs_EIS	(507.0 / 80.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 3.4325 x	%RSD=6.1
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5728 x	%RSD=7.1
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.6896 x	%RSD=7.7
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.6904 x	%RSD=7.1
13C8_PFOsA_EIS	(506.0 / 78.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 4.3389 x	%RSD=5.1
D3_NMeFOsA_EIS	(515.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 0.9473 x	%RSD=12.5
D5_NEtFOsA_EIS	(531.1 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 0.8745 x	%RSD=6.8
D3_MeFOsAA_EIS	(573.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.6324 x	%RSD=5.4
D5_EtFOsAA_EIS	(589.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.4389 x	%RSD=12.4
D7_NMeFOsE_EIS	(623.2 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 1.3302 x	%RSD=9.0
D9_NEtFOsE_EIS	(639.2 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 0.6056 x	%RSD=7.0
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 4.8947 x	%RSD=6.9

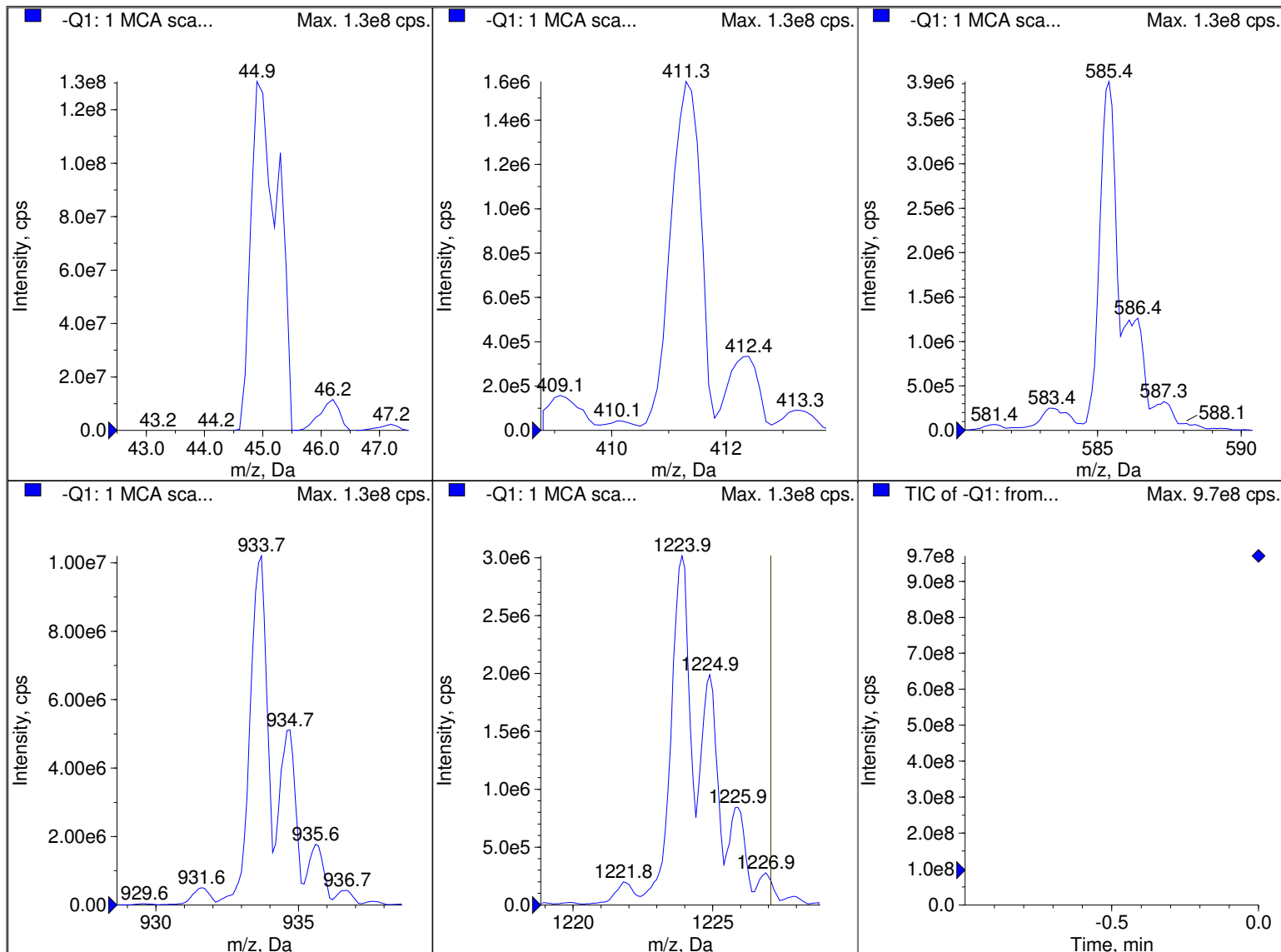
x= Concentration Analyte

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

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

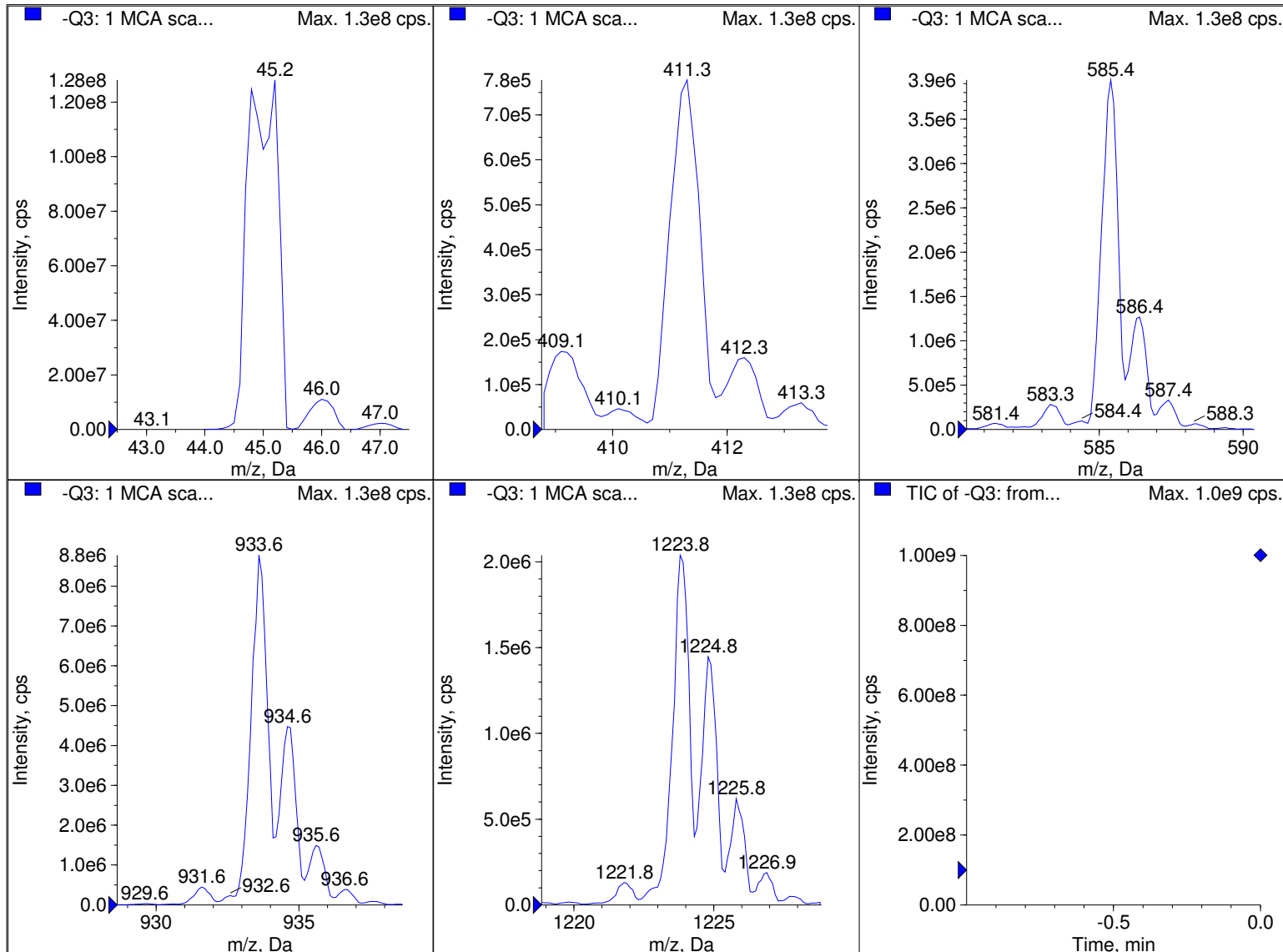
$$\text{Multiplier} = \frac{\text{Concentration of Analyte}}{\text{Concentration of PFOA}} \text{ in curve standard mix}$$

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



Peak List for "-Q1: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142838.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0305	1.3061e8	0.6158	-0.0325
2	411.2590	411.3148	1.5745e6	0.6085	-0.0558
3	585.3850	585.3651	3.9270e6	0.6307	0.0199
4	933.6360	933.6197	1.0205e7	0.6552	0.0163
5	1223.8450	1223.8627	3.0170e6	0.6967	-0.0177
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a

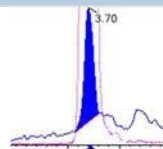
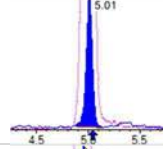
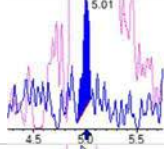
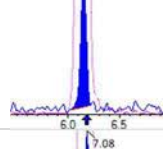
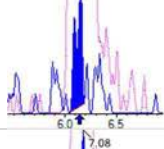
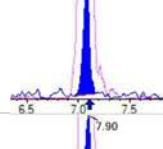
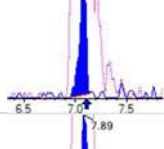
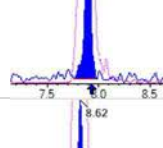
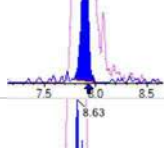
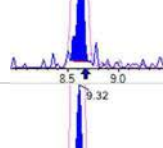
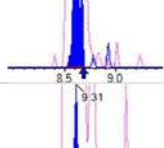
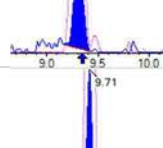
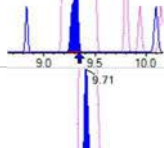
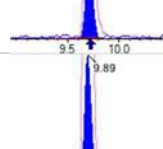
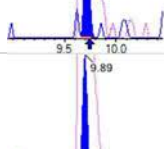
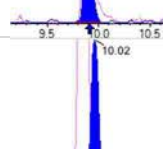
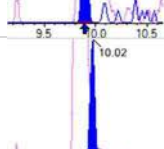
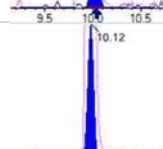
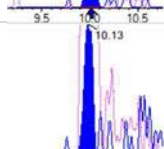
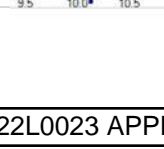
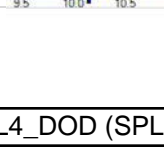


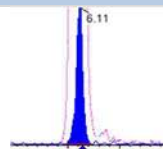
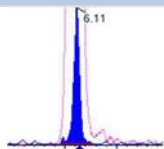
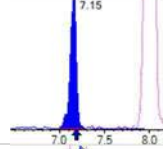
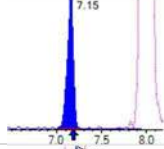
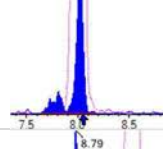
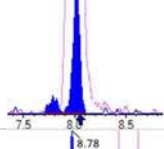
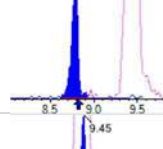
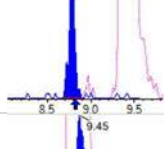
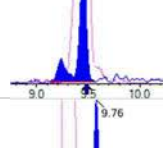
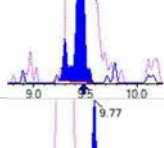
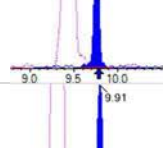
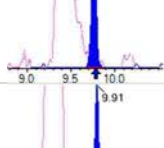
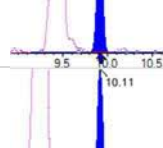
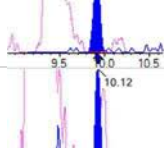
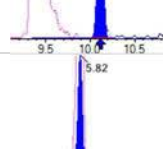
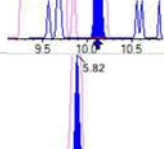
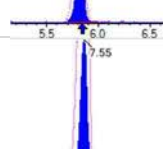
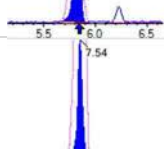
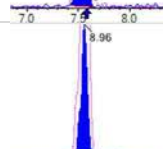
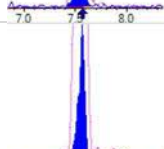

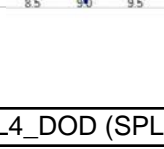
Peak List for "-Q3: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142403.wiff (Turbo Spray)"

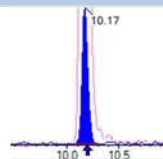
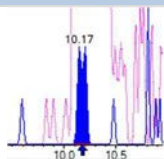
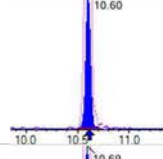
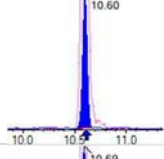
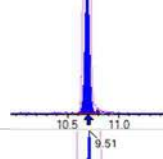
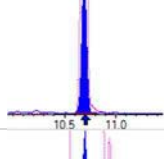
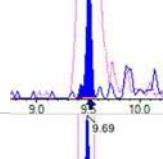
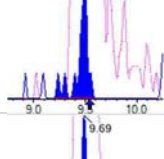
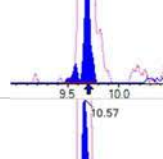
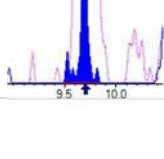
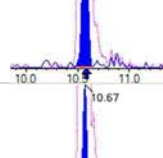
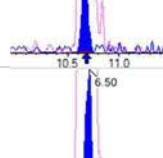
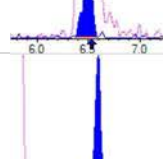
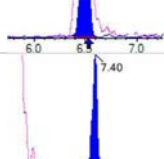
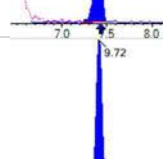
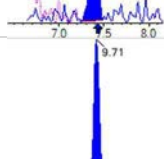
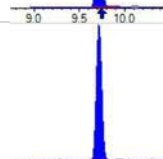
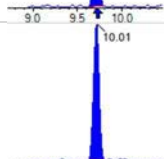
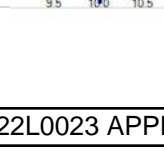
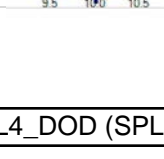
	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9799	1.2814e8	0.6414	0.0181
2	411.2590	411.2677	7.7810e5	0.6076	-8.6898e-3
3	585.3850	585.3784	3.9438e6	0.6511	6.5868e-3
4	933.6360	933.6279	8.7759e6	0.6302	8.0526e-3
5	1223.8450	1223.8609	2.0397e6	0.6225	-0.0159
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a

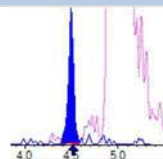
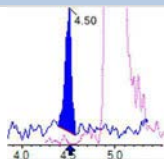
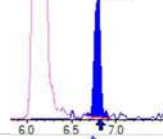
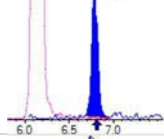
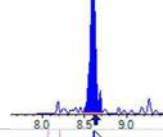
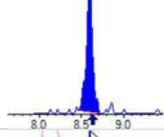
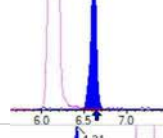
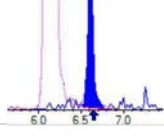
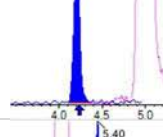
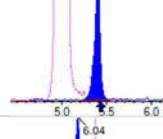
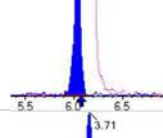
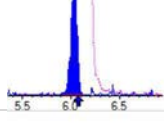
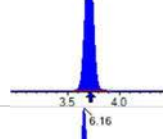
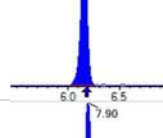
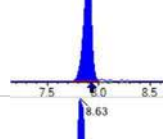
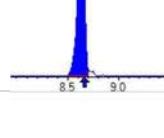
EPA 1633 SPLP

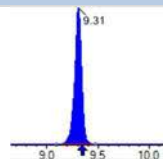
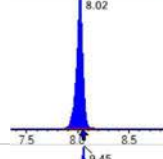
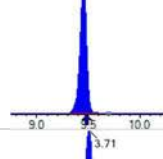
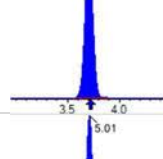
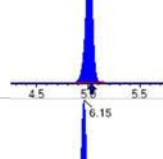
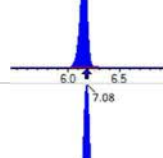
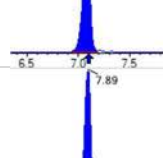
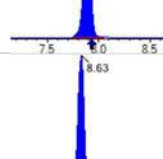
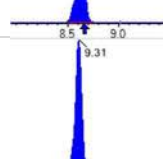
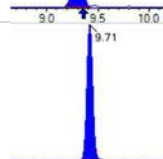

Initial Calibration: SB03941

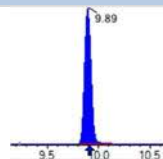
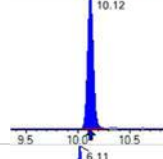
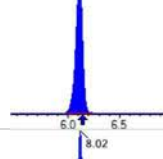
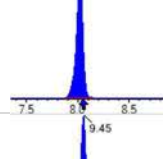
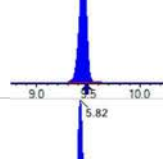
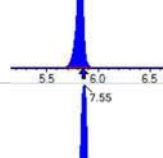
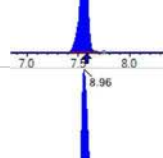
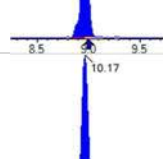
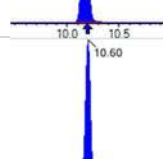
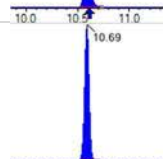

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 33232	(3.70, 1.00) (0.00, N/A, 0.0)	38.7	N/A 0.0 0.0	0.3669 [0.4000]	91.7%			
PFPeA	(262.9 / 219.0) 29292 (262.9 / 69.0) 400	(5.01, 1.00) (0.00, N/A, 0.0)	185.1 11.6	0.0136 121.9 121.9	0.2148 [0.2000]	107.4%			
PFHxA	(313.0 / 269.0) 21402 (313.0 / 119.0) 1522	(6.15, 1.00) (0.00, N/A, 0.9)	65.5 16.5	0.0711 72.7 72.7	0.0985 [0.1000]	98.5%			
PFHpA	(363.0 / 319.0) 20982 (363.0 / 169.0) 6156	(7.08, 1.00) (0.00, N/A, 0.1)	90.6 69.9	0.2934 94.2 94.2	0.1029 [0.1000]	102.9%			
PFOA	(413.0 / 369.0) 24265 (413.0 / 169.0) 8577	(7.90, 1.00) (0.00, N/A, 0.2)	63.6 78.4	0.3535 108.2 108.2	0.1081 [0.1000]	108.1%			
PFNA	(463.0 / 419.0) 12946 (463.0 / 169.0) 4470	(8.62, 1.00) (-0.01, N/A, -0.3)	48.4 29.7	0.3453 179.1 179.1	0.0879 [0.1000]	87.9%			IR2,
PFDA	(513.0 / 469.0) 23366 (513.0 / 169.0) 1070	(9.32, 1.00) (0.00, N/A, 0.1)	57.7 566.2	0.0458 47.9 47.9	0.1078 [0.1000]	107.8%			IR1,
PFUnA	(563.0 / 519.0) 38565 (563.0 / 169.0) 3911	(9.71, 1.00) (0.00, N/A, 0.1)	137.9 44.4	0.1014 116.8 116.8	0.1273 [0.1000]	127.3%			
PFDoA	(613.0 / 569.0) 35780 (613.0 / 169.0) 5060	(9.89, 1.00) (0.00, N/A, -0.1)	145.7 35.8	0.1414 101.6 101.6	0.1293 [0.1000]	129.3%			
PFTrDA	(663.0 / 619.0) 31090 (663.0 / 169.0) 6638	(10.02, 1.01) (N/A, -0.01, -0.4)	110.4 53.1	0.2135 104.3 104.3	0.1296 [0.1000]	129.6%			
PFTeDA	(713.0 / 669.0) 25589 (713.0 / 169.0) 4161	(10.12, 1.00) (0.00, N/A, -0.5)	94.3 12.4	0.1626 79.9 79.9	0.1029 [0.1000]	102.9%			

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) 31824 (298.9 / 99.0) 25667	(6.11, 1.00) (0.00, N/A, -0.1)	228.6 158.1	0.8066 131.1 131.1	0.0899 [0.0885]	101.6%			
PFPeS	(349.0 / 80.0) 61392 (349.0 / 99.0) 26354	(7.15, 0.89) (N/A, -0.03, -0.1)	200.8 251.0	0.4293 120.6 120.6	0.0959 [0.0938]	102.2%			
PFHxS	(399.0 / 80.0) 54752 (399.0 / 99.0) 16706	(8.02, 1.00) (0.00, N/A, 0.2)	16908.1 6180.4	0.3051 90.8 90.8	0.0983 [0.0911]	107.9%			
PFHpS	(449.0 / 80.0) 40149 (449.0 / 99.0) 13981	(8.79, 0.93) (N/A, -0.03, 0.3)	153.7 102.5	0.3482 127.2 127.2	0.0837 [0.0951]	88.0%			
PFOS	(499.0 / 80.0) 63112 (499.0 / 99.0) 14475	(9.45, 1.00) (0.00, N/A, -0.1)	158.9 43.2	0.2294 94.3 94.3	0.1057 [0.0927]	114.0%			
PFNS	(549.0 / 80.0) 63295 (549.0 / 99.0) 15388	(9.76, 1.03) (N/A, -0.02, -0.6)	172.2 304.3	0.2431 99.6 99.6	0.0956 [0.0960]	99.6%			
PFDS	(599.0 / 80.0) 66751 (599.0 / 99.0) 15205	(9.91, 1.05) (N/A, -0.01, 0.0)	278.7 65.1	0.2278 101.2 101.2	0.0908 [0.0963]	94.3%			
PFDoS	(698.9 / 80.0) 32302 (698.9 / 99.0) 2212	(10.11, 1.07) (N/A, -0.01, -0.4)	151.2 18.9	0.0685 28.0 28.0	0.1051 [0.0970]	108.4%			IR1,
4:2FTS	(327.0 / 307.0) 73840 (327.0 / 81.0) 44310	(5.82, 1.00) (0.00, N/A, 0.1)	398.1 178.0	0.6001 121.5 121.5	0.3917 [0.3738]	104.8%			
6:2FTS	(427.0 / 407.0) 37991 (427.0 / 81.0) 30069	(7.55, 1.00) (0.00, N/A, 0.6)	171.3 166.4	0.7915 101.7 101.7	0.3927 [0.3796]	103.4%			
8:2FTS	(527.0 / 507.0) 54208 (527.0 / 81.0) 22387	(8.96, 1.00) (0.00, N/A, -0.5)	239.2 132.1	0.4130 73.0 73.0	0.5390 [0.3833]	140.6%			QC,

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
PFOSA	(498.0 / 78.0) 58943 (498.0 / 478.0) 1534	(10.17, 1.00) (0.00, N/A, -0.2)	160.7 16.7	0.0260 124.9 124.9	0.1005 [0.1000]	100.5%			
NMeFOSA	(511.9 / 219.0) 43872 (511.9 / 169.0) 26519	(10.60, 1.00) (0.00, N/A, 0.1)	298.9 244.3	0.6045 83.9 83.9	0.4219 [0.4000]	105.5%			
NEIFOSA	(526.0 / 219.0) 44346 (526.0 / 169.0) 51516	(10.69, 1.00) (0.00, N/A, 0.0)	466.2 369.0	1.1617 109.8 109.8	0.3771 [0.4000]	94.3%			
NMeFOSAA	(570.0 / 419.0) 8400 (570.0 / 483.0) 3567	(9.51, 1.00) (0.01, N/A, 0.9)	51.6 212.6	0.4247 69.1 69.1	0.0791 [0.1000]	79.1%			
NEIFOSAA	(584.0 / 419.0) 14604 (584.0 / 526.0) 5838	(9.69, 1.00) (0.01, N/A, 0.0)	4382.3 108.5	0.3998 54.5 54.5	0.1309 [0.1000]	130.9%			QC,
NMeFOSE	(616.1 / 59.0) 9057	(10.57, 1.00) (0.00, N/A, 0.0)	71.0	N/A 0.0 0.0	0.3368 [0.4000]	84.2%			
NEtFOSE	(630.0 / 59.0) 2592	(10.67, 1.00) (0.01, N/A, 0.0)	55.9	N/A 0.0 0.0	0.5290 [0.4000]	132.3%			QC,
HFPO-DA	(285.0 / 169.0) 18333 (285.0 / 185.0) 52126	(6.50, 1.00) (0.00, N/A, 0.2)	196.1 229.6	2.8433 103.6 103.6	0.2191 [0.2000]	109.5%			
ADONA	(377.0 / 85.0) 66900 (377.0 / 251.0) 10886	(7.40, 1.14) (N/A, -0.03, 0.0)	225.5 39.2	0.1627 130.7 130.7	0.1800 [0.1885]	95.5%			
9CI-Pf3ONS	(531.0 / 351.0) 210135 (533.0 / 353.0) 57347	(9.72, 1.49) (N/A, -0.01, 0.2)	525.6 173.1	0.2729 92.2 92.2	0.1889 [0.1867]	101.2%			
11CI-PF3OUDS	(631.0 / 451.0) 110528 (633.0 / 453.0) 41123	(10.00, 1.54) (N/A, -0.01, -0.3)	422.1 246.1	0.3721 112.5 112.5	0.2127 [0.1886]	112.8%			

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
3:3FTCA	(241.0 / 177.0) 1752 (241.0 / 117.0) 3522	(4.50, 0.90) (N/A, -0.02, -0.1)	83.0 47.1	2.0106 120.1 120.1	0.3722 [0.4000]	93.0%			
5:3FTCA	(341.0 / 236.7) 13037 (341.0 / 217.0) 28648	(6.79, 1.10) (N/A, -0.03, 0.1)	86.9 98.3	2.1975 150.1 150.1	0.3394 [0.4000]	84.9%			IR2,
7:3FTCA	(441.0 / 317.0) 16935 (441.0 / 337.0) 16853	(8.60, 1.40) (N/A, -0.03, 0.2)	63.0 96.2	0.9952 118.8 118.8	0.3832 [0.4000]	95.8%			
PFEESA	(315.0 / 135.0) 48752 (315.0 / 83.0) 14590	(6.61, 1.07) (N/A, -0.03, 0.3)	297.4 57.3	0.2993 97.5 97.5	0.2049 [0.1785]	114.8%			
PFMPA	(229.0 / 85.0) 8084	(4.21, 0.84) (N/A, -0.02, 0.0)	159.7	N/A 0.0 0.0	0.2160 [0.2000]	108.0%			
PFMBA	(279.0 / 85.0) 26278	(5.40, 1.08) (N/A, -0.03, 0.0)	279.2	N/A 0.0 0.0	0.2031 [0.2000]	101.6%			
NFDHA	(295.0 / 201.0) 22691 (295.0 / 85.0) 23611	(6.04, 0.98) (N/A, -0.03, 0.3)	161.6 125.5	1.0405 117.9 117.9	0.2070 [0.2000]	103.5%			
13C3_PFBa_IIS	(216.0 / 172.0) 129665	(3.71, N/A) (N/A, -0.01, N/A)	734.9	N/A	0.9315 [1.0000]	93.2% {85.4%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 201573	(6.16, N/A) (N/A, -0.03, N/A)	556.3	N/A	0.8729 [1.0000]	87.3% {86.2%}			
13C4_PFOA_IIS	(417.0 / 372.0) 188558	(7.90, N/A) (N/A, -0.03, N/A)	449.6	N/A	0.8577 [1.0000]	85.8% {79.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 150014	(8.63, N/A) (N/A, -0.04, N/A)	351.9	N/A	0.8101 [1.0000]	81.0% {74.2%}			

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_IIS	(515.1 / 470.1) 182339	(9.31, N/A) (N/A, -0.03, N/A)	393.6	N/A	0.9866 [1.0000]	98.7% {104.9%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 376592	(8.02, N/A) (N/A, -0.03, N/A)	863.0	N/A	0.9328 [1.0000]	93.3% {89.1%}			
13C4_PFOS_IIS	(502.8 / 79.9) 319349	(9.45, N/A) (N/A, -0.03, N/A)	441.2	N/A	1.0005 [1.0000]	100.1% {97.4%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1110686	(3.71, N/A) (N/A, -0.01, N/A)	922.4	N/A	8.3227 [8.0000]	104.0% {93.3%}			
13C5_PFPeA_EIS	(267.9 / 223.0) 621129	(5.01, N/A) (N/A, -0.03, N/A)	742.0	N/A	4.4287 [4.0000]	110.7% {89.2%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 506172	(6.15, N/A) (N/A, -0.03, N/A)	648.4	N/A	2.1821 [2.0000]	109.1% {93.9%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 447320	(7.08, N/A) (N/A, -0.03, N/A)	438.8	N/A	2.2105 [2.0000]	110.5% {91.1%}			
13C8_PFOA_EIS	(421.0 / 376.0) 456439	(7.89, N/A) (N/A, -0.03, N/A)	477.0	N/A	2.2073 [2.0000]	110.4% {91.7%}			
13C9_PFNA_EIS	(472.0 / 427.0) 171585	(8.63, N/A) (N/A, -0.04, N/A)	503.1	N/A	1.0402 [1.0000]	104.0% {78.4%}			
13C6_PFDA_EIS	(519.0 / 474.0) 227812	(9.31, N/A) (N/A, -0.03, N/A)	316.3	N/A	0.8785 [1.0000]	87.8% {81.0%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 383307	(9.71, N/A) (N/A, -0.01, N/A)	510.8	N/A	1.0391 [1.0000]	103.9% {96.2%}			

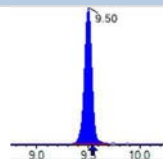
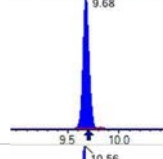
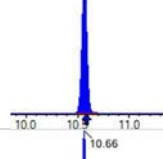
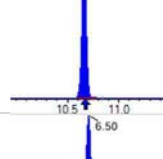
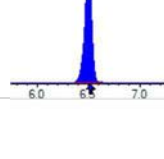
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 321089	(9.89, N/A) (N/A, -0.01, N/A)	437.4	N/A	0.8721 [1.0000]	87.2% {82.8%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 280643	(10.12, N/A) (N/A, -0.01, N/A)	381.3	N/A	1.1478 [1.0000]	114.8% {116.0%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1291973	(6.11, N/A) (N/A, -0.03, N/A)	870.8	N/A	2.0291 [2.0000]	101.5% {94.1%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 716988	(8.02, N/A) (N/A, -0.03, N/A)	976.1	N/A	2.1164 [2.0000]	105.8% {95.1%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1099756	(9.45, N/A) (N/A, -0.03, N/A)	492.9	N/A	2.0065 [2.0000]	100.3% {92.4%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 228032	(5.82, N/A) (N/A, -0.03, N/A)	818.1	N/A	4.2284 [4.0000]	105.7% {101.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 251709	(7.55, N/A) (N/A, -0.03, N/A)	625.3	N/A	3.8767 [4.0000]	96.9% {91.7%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 253898	(8.96, N/A) (N/A, -0.04, N/A)	403.4	N/A	3.9063 [4.0000]	97.7% {85.8%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 1240858	(10.17, N/A) (N/A, -0.01, N/A)	815.5	N/A	1.7911 [2.0000]	89.6% {84.7%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 255122	(10.60, N/A) (N/A, -0.01, N/A)	937.9	N/A	1.6866 [2.0000]	84.3% {77.3%}			
D5_NEiFOSA_EIS	(531.1 / 169.0) 260767	(10.69, N/A) (N/A, -0.01, N/A)	1231.1	N/A	1.8675 [2.0000]	93.4% {91.6%}			

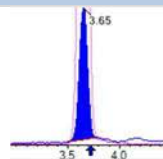
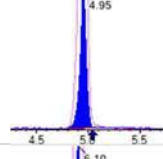
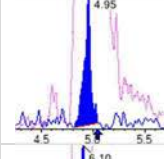
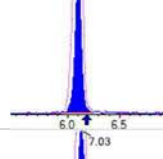
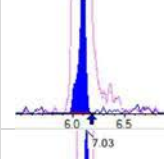
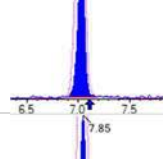
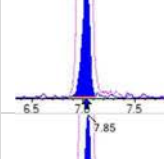
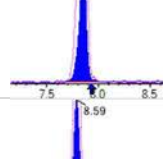
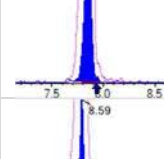
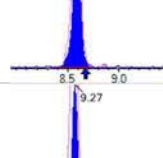
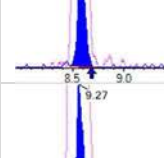
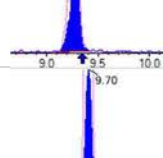
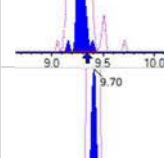
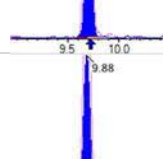
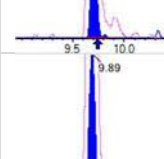
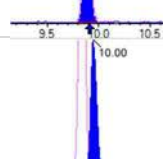
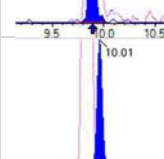
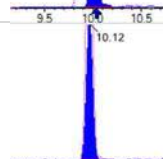
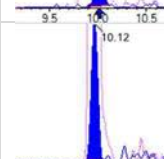
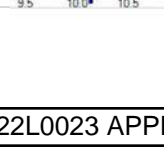
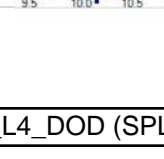


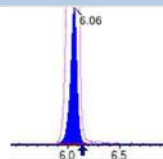
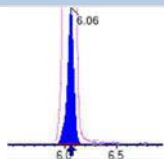
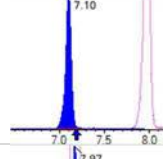
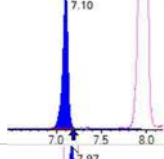
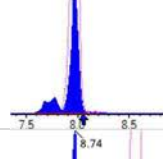
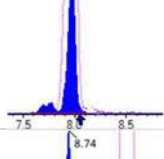
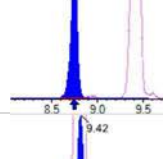
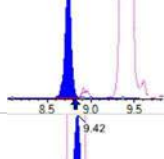
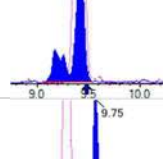
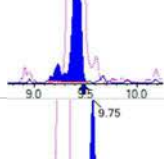
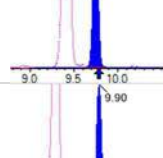
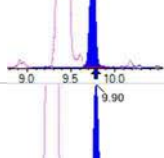
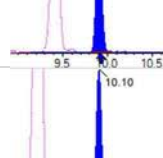
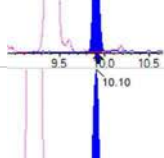
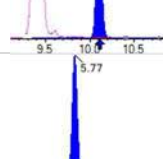
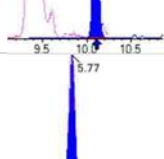
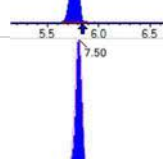
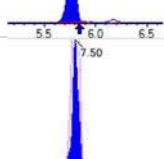
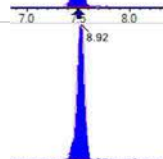
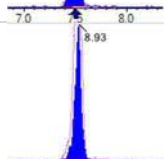
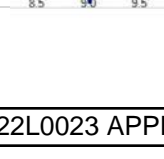
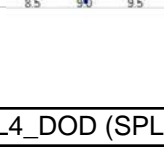
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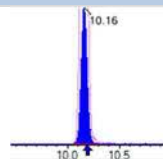
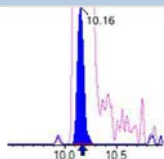
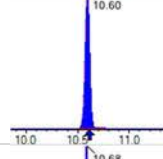
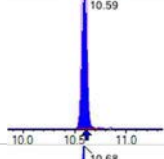
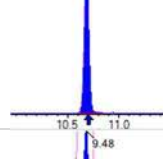
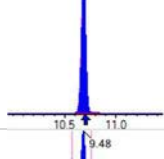
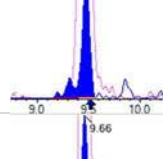
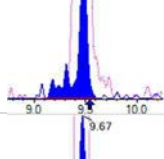
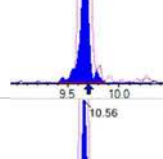
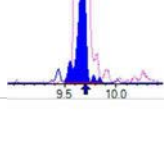
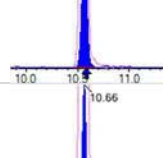
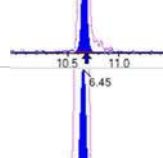
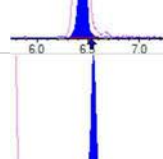
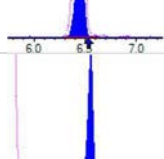
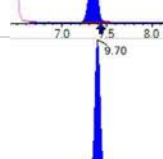
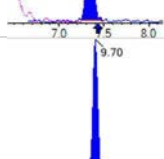
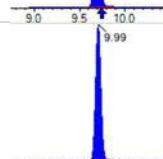
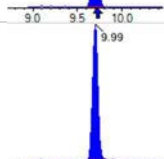
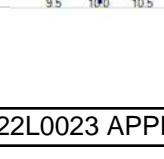
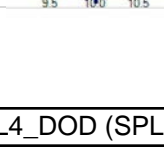
Sample I.D.: SB03941-CAL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

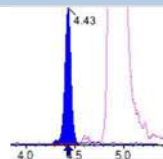
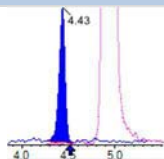
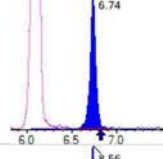
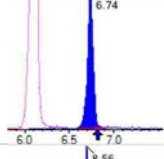
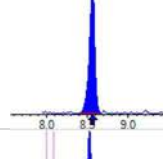
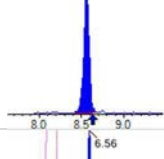
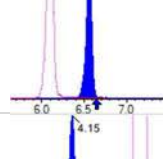
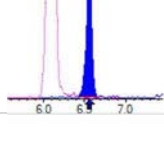
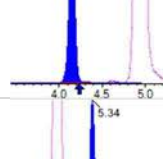
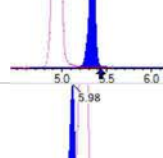
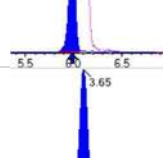
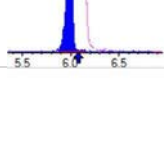
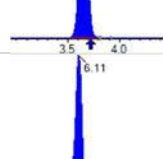
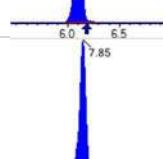
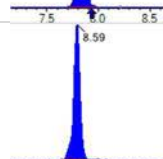

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 Path: S2022-12-21A (1)
 Acquired: 2022/12/21 - 14:26

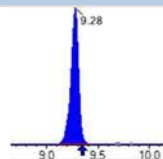
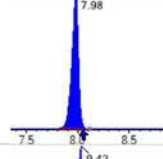
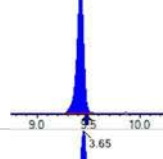
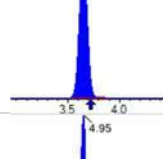
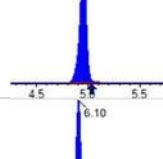
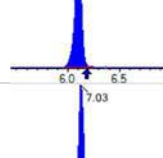
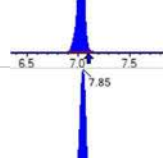
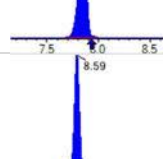
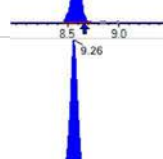
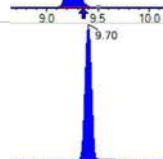

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 544985	(9.50, N/A) (N/A, -0.03, N/A)	407.2	N/A	4.1816 [4.0000]	104.5% {106.7%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 497176	(9.68, N/A) (N/A, -0.02, N/A)	540.1	N/A	4.3280 [4.0000]	108.2% {105.5%}			
D7_NMeFOSE_EIS	(623.2 / 58.9) 426059	(10.56, N/A) (N/A, -0.01, N/A)	1224.8	N/A	20.0598 [20.0000]	100.3% {98.7%}			
D9_NEtFOSE_EIS	(639.2 / 58.9) 191338	(10.66, N/A) (N/A, -0.01, N/A)	1253.8	N/A	19.7881 [20.0000]	98.9% {104.9%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1101544	(6.50, N/A) (N/A, -0.03, N/A)	840.6	N/A	8.9317 [8.0000]	111.6% {93.8%}			

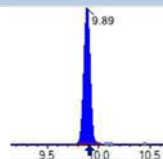
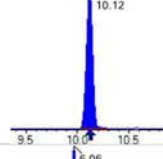
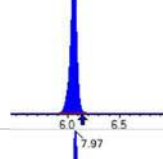
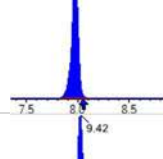
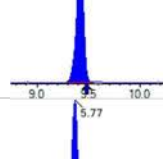
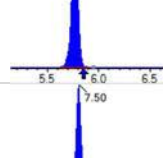
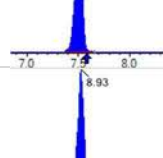
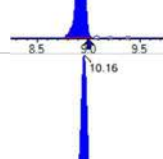
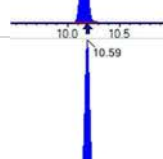
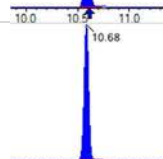

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 188421	(3.65, 1.00) (0.00, N/A, 0.0)	60.5	N/A 0.0 0.0	1.9028 [2.0000]	95.1%			
PFPeA	(262.9 / 219.0) 139219 (262.9 / 69.0) 1694	(4.95, 1.00) (0.00, N/A, 0.1)	388.4 40.0	0.0122 108.7 108.7	0.9614 [1.0000]	96.1%			
PFHxA	(313.0 / 269.0) 115909 (313.0 / 119.0) 10897	(6.10, 1.00) (0.00, N/A, 0.2)	310.0 98.6	0.0940 96.2 96.2	0.4941 [0.5000]	98.8%			
PFHpA	(363.0 / 319.0) 110782 (363.0 / 169.0) 29592	(7.03, 1.00) (0.00, N/A, 0.0)	210.6 163.1	0.2671 85.8 85.8	0.5195 [0.5000]	103.9%			
PFOA	(413.0 / 369.0) 131268 (413.0 / 169.0) 45112	(7.85, 1.00) (0.00, N/A, 0.2)	272.1 247.3	0.3437 105.2 105.2	0.5483 [0.5000]	109.7%			
PFNA	(463.0 / 419.0) 93190 (463.0 / 169.0) 19066	(8.59, 1.00) (0.00, N/A, -0.1)	270.2 71.5	0.2046 106.2 106.2	0.4982 [0.5000]	99.6%			
PFDA	(513.0 / 469.0) 116985 (513.0 / 169.0) 7443	(9.27, 1.00) (0.01, N/A, 0.2)	179.0 455.7	0.0636 66.6 66.6	0.4923 [0.5000]	98.5%			
PFUnA	(563.0 / 519.0) 112638 (563.0 / 169.0) 16433	(9.70, 1.00) (0.00, N/A, -0.2)	261.9 192.3	0.1459 168.0 168.0	0.3772 [0.5000]	75.4%			IR2,
PFDoA	(613.0 / 569.0) 170817 (613.0 / 169.0) 22966	(9.88, 1.00) (0.00, N/A, -0.1)	386.2 148.3	0.1344 96.6 96.6	0.5314 [0.5000]	106.3%			
PFTrDA	(663.0 / 619.0) 139394 (663.0 / 169.0) 23330	(10.00, 1.01) (N/A, -0.02, -0.6)	293.8 128.9	0.1674 81.8 81.8	0.5005 [0.5000]	100.1%			
PFTeDA	(713.0 / 669.0) 107548 (713.0 / 169.0) 13556	(10.12, 1.00) (0.00, N/A, 0.0)	266.4 52.5	0.1260 62.0 62.0	0.5082 [0.5000]	101.6%			

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) 169308 (298.9 / 99.0) 116887	(6.06, 1.00) (0.00, N/A, 0.1)	532.3 438.0	0.6904 112.2 112.2	0.4218 [0.4424]	95.4%			
PFPeS	(349.0 / 80.0) 303756 (349.0 / 99.0) 113877	(7.10, 0.89) (N/A, -0.08, 0.0)	643.5 533.0	0.3749 105.3 105.3	0.4401 [0.4692]	93.8%			
PFHxS	(399.0 / 80.0) 254653 (399.0 / 99.0) 87687	(7.97, 1.00) (0.00, N/A, 0.0)	2864.9 16565.2	0.3443 102.4 102.4	0.4242 [0.4555]	93.1%			
PFHpS	(449.0 / 80.0) 232130 (449.0 / 99.0) 63281	(8.74, 0.93) (N/A, -0.07, 0.2)	720.8 355.5	0.2726 99.6 99.6	0.4831 [0.4757]	101.5%			
PFOS	(499.0 / 80.0) 271232 (499.0 / 99.0) 55582	(9.42, 1.00) (0.00, N/A, 0.2)	71.7 84.7	0.2049 84.3 84.3	0.4537 [0.4637]	97.8%			
PFNS	(549.0 / 80.0) 326430 (549.0 / 99.0) 76899	(9.75, 1.03) (N/A, -0.03, 0.0)	700.8 332.3	0.2356 96.5 96.5	0.4923 [0.4799]	102.6%			
PFDS	(599.0 / 80.0) 361311 (599.0 / 99.0) 88020	(9.90, 1.05) (N/A, -0.02, 0.0)	528.4 257.7	0.2436 108.2 108.2	0.4908 [0.4816]	101.9%			
PFDoS	(698.9 / 80.0) 143379 (698.9 / 99.0) 39342	(10.10, 1.07) (N/A, -0.01, 0.0)	394.0 390.0	0.2744 112.1 112.1	0.4660 [0.4848]	96.1%			
4:2FTS	(327.0 / 307.0) 369834 (327.0 / 81.0) 206873	(5.77, 1.00) (0.00, N/A, -0.2)	740.7 453.5	0.5594 113.2 113.2	1.8624 [1.8691]	99.6%			
6:2FTS	(427.0 / 407.0) 212400 (427.0 / 81.0) 133719	(7.50, 1.00) (0.00, N/A, 0.2)	557.0 426.3	0.6296 80.9 80.9	1.8471 [1.8981]	97.3%			
8:2FTS	(527.0 / 507.0) 187570 (527.0 / 81.0) 119060	(8.92, 1.00) (0.00, N/A, -0.3)	288.9 320.4	0.6348 112.1 112.1	1.8629 [1.9166]	97.2%			

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) 352198 (498.0 / 478.0) 8651	(10.16, 1.00) (0.00, N/A, 0.4)	513.9 157.2	0.0246 117.8 117.8	0.4906 [0.5000]	98.1%			
NMeFOSA	(511.9 / 219.0) 263260 (511.9 / 169.0) 153613	(10.60, 1.00) (0.00, N/A, 0.0)	638.7 672.6	0.5835 81.0 81.0	2.2704 [2.0000]	113.5%			
NEIFOSA	(526.0 / 219.0) 251838 (526.0 / 169.0) 278757	(10.68, 1.00) (0.00, N/A, 0.0)	1012.6 877.2	1.1069 104.7 104.7	1.9774 [2.0000]	98.9%			
NMeFOSAA	(570.0 / 419.0) 51544 (570.0 / 483.0) 33073	(9.48, 1.00) (0.00, N/A, -0.3)	116.9 95.9	0.6416 104.4 104.4	0.5096 [0.5000]	101.9%			
NEIFOSAA	(584.0 / 419.0) 57365 (584.0 / 526.0) 31030	(9.66, 1.00) (0.00, N/A, -0.4)	562.4 124.4	0.5409 73.8 73.8	0.5544 [0.5000]	110.9%			
NMeFOSE	(616.1 / 59.0) 54315	(10.56, 1.00) (0.00, N/A, 0.0)	454.0	N/A 0.0 0.0	1.8098 [2.0000]	90.5%			
NEtFOSE	(630.0 / 59.0) 10545	(10.66, 1.00) (0.01, N/A, 0.0)	298.7	N/A 0.0 0.0	1.8678 [2.0000]	93.4%			
HFPO-DA	(285.0 / 169.0) 90628 (285.0 / 185.0) 244184	(6.45, 1.00) (0.00, N/A, 0.3)	355.2 511.8	2.6944 98.2 98.2	1.0286 [1.0000]	102.9%			
ADONA	(377.0 / 85.0) 360241 (377.0 / 251.0) 45845	(7.35, 1.14) (N/A, -0.08, 0.0)	653.3 198.6	0.1273 102.2 102.2	0.9205 [0.9427]	97.6%			
9CI-Pf3ONS	(531.0 / 351.0) 951547 (533.0 / 353.0) 308143	(9.70, 1.50) (N/A, -0.03, 0.0)	461.5 485.9	0.3238 109.4 109.4	0.8553 [0.9333]	91.7%			
11CI-PF3OUDS	(631.0 / 451.0) 560809 (633.0 / 453.0) 162858	(9.99, 1.55) (N/A, -0.02, 0.0)	818.9 500.2	0.2904 87.8 87.8	1.0253 [0.9432]	108.7%			

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
3:3FTCA	(241.0 / 177.0) 8941 (241.0 / 117.0) 17863	(4.43, 0.89) (N/A, -0.08, -0.1)	270.0 173.3	1.9979 119.4 119.4	1.7890 [2.0000]	89.5%			
5:3FTCA	(341.0 / 236.7) 83112 (341.0 / 217.0) 121575	(6.74, 1.10) (N/A, -0.08, 0.0)	282.1 320.5	1.4628 99.9 99.9	2.0050 [2.0000]	100.2%			
7:3FTCA	(441.0 / 317.0) 94595 (441.0 / 337.0) 73967	(8.56, 1.40) (N/A, -0.07, 0.0)	212.2 275.3	0.7819 93.4 93.4	1.9833 [2.0000]	99.2%			
PFEESA	(315.0 / 135.0) 227230 (315.0 / 83.0) 64514	(6.56, 1.07) (N/A, -0.08, 0.1)	666.6 216.3	0.2839 92.5 92.5	0.8847 [0.8925]	99.1%			
PFMPA	(229.0 / 85.0) 38716	(4.15, 0.84) (N/A, -0.08, 0.0)	651.7	N/A 0.0 0.0	0.9742 [1.0000]	97.4%			
PFMBA	(279.0 / 85.0) 138545	(5.34, 1.08) (N/A, -0.09, 0.0)	716.8	N/A 0.0 0.0	1.0085 [1.0000]	100.9%			
NFDHA	(295.0 / 201.0) 109976 (295.0 / 85.0) 101086	(5.98, 0.98) (N/A, -0.08, 0.0)	530.5 312.3	0.9192 104.1 104.1	0.9297 [1.0000]	93.0%			
13C3_PFBA_IIS	(216.0 / 172.0) 145032	(3.65, N/A) (N/A, -0.07, N/A)	748.9	N/A	1.0419 [1.0000]	104.2% {95.6%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 249645	(6.11, N/A) (N/A, -0.08, N/A)	617.2	N/A	1.0811 [1.0000]	108.1% {106.7%}			
13C4_PFOA_IIS	(417.0 / 372.0) 223206	(7.85, N/A) (N/A, -0.08, N/A)	653.2	N/A	1.0153 [1.0000]	101.5% {93.8%}			
13C5_PFNA_IIS	(468.0 / 423.0) 192740	(8.59, N/A) (N/A, -0.08, N/A)	339.0	N/A	1.0408 [1.0000]	104.1% {95.3%}			

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) 201200	(9.28, N/A) (N/A, -0.07, N/A)	450.6	N/A	1.0887 [1.0000]	108.9% { 115.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 391808	(7.98, N/A) (N/A, -0.07, N/A)	810.8	N/A	0.9705 [1.0000]	97.1% { 92.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 350992	(9.42, N/A) (N/A, -0.06, N/A)	464.9	N/A	1.0997 [1.0000]	110.0% { 107.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1214259	(3.65, N/A) (N/A, -0.07, N/A)	905.9	N/A	8.1347 [8.0000]	101.7% { 102.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 659529	(4.95, N/A) (N/A, -0.08, N/A)	789.0	N/A	3.7969 [4.0000]	94.9% { 94.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 546323	(6.10, N/A) (N/A, -0.08, N/A)	742.9	N/A	1.9017 [2.0000]	95.1% { 101.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 467878	(7.03, N/A) (N/A, -0.08, N/A)	943.4	N/A	1.8669 [2.0000]	93.3% { 95.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 486948	(7.85, N/A) (N/A, -0.08, N/A)	788.4	N/A	1.9893 [2.0000]	99.5% { 97.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 217999	(8.59, N/A) (N/A, -0.08, N/A)	418.4	N/A	1.0286 [1.0000]	102.9% { 99.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 249666	(9.26, N/A) (N/A, -0.08, N/A)	346.2	N/A	0.8725 [1.0000]	87.2% { 88.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 377869	(9.70, N/A) (N/A, -0.03, N/A)	445.6	N/A	0.9284 [1.0000]	92.8% { 94.9% }			

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) 372869	(9.89, N/A) (N/A, -0.02, N/A)	424.9	N/A	0.9178 [1.0000]	91.8% { 96.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 238784	(10.12, N/A) (N/A, -0.01, N/A)	386.9	N/A	0.8850 [1.0000]	88.5% { 98.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1464188	(6.06, N/A) (N/A, -0.08, N/A)	862.0	N/A	2.2103 [2.0000]	110.5% { 106.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 772747	(7.97, N/A) (N/A, -0.08, N/A)	946.5	N/A	2.1924 [2.0000]	109.6% { 102.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1101471	(9.42, N/A) (N/A, -0.06, N/A)	400.8	N/A	1.8285 [2.0000]	91.4% { 92.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 240226	(5.77, N/A) (N/A, -0.08, N/A)	728.1	N/A	4.2815 [4.0000]	107.0% { 107.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 299151	(7.50, N/A) (N/A, -0.08, N/A)	829.8	N/A	4.4285 [4.0000]	110.7% { 109.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 254209	(8.93, N/A) (N/A, -0.07, N/A)	387.1	N/A	3.7592 [4.0000]	94.0% { 85.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1519271	(10.16, N/A) (N/A, -0.02, N/A)	650.9	N/A	1.9952 [2.0000]	99.8% { 103.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 284500	(10.59, N/A) (N/A, -0.02, N/A)	1128.4	N/A	1.7113 [2.0000]	85.6% { 86.2% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 282389	(10.68, N/A) (N/A, -0.01, N/A)	1021.0	N/A	1.8400 [2.0000]	92.0% { 99.2% }			

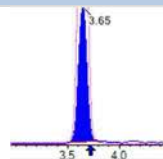
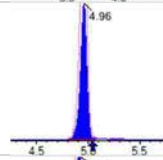
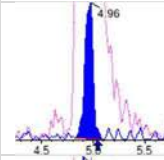
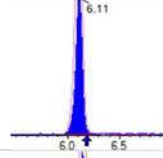
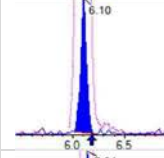
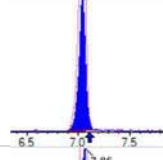
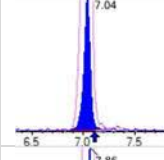
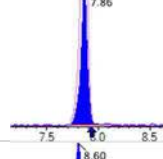
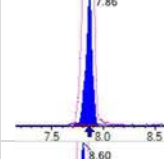
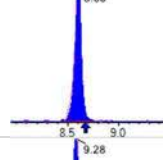
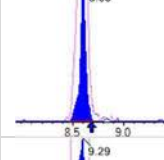
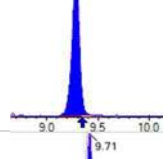
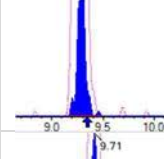
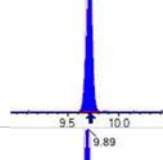
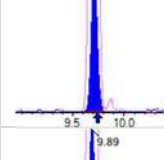
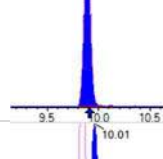
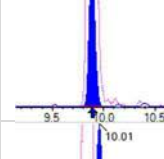
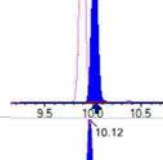
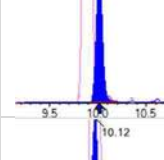
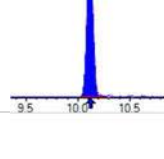
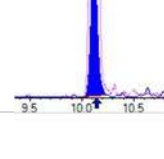


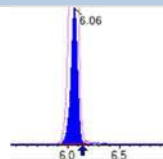
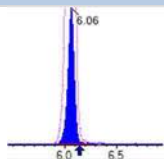
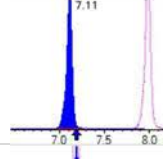
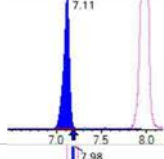
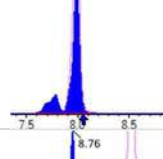
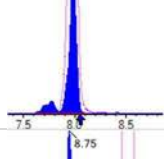
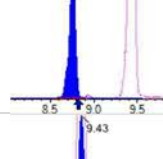
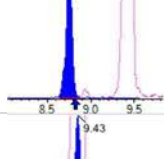
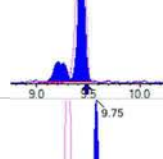
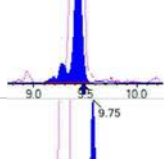
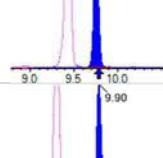
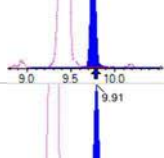
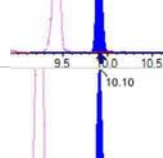
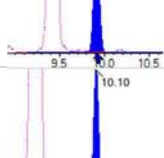
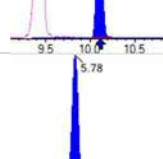
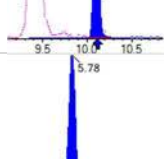
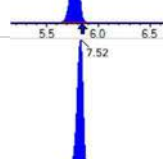
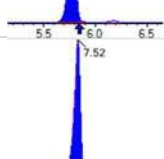
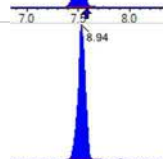
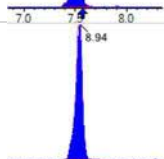
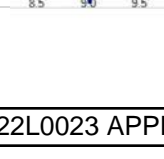
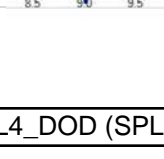
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

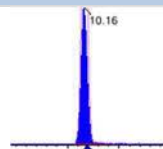
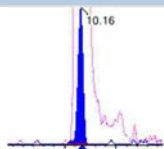
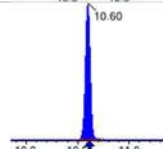
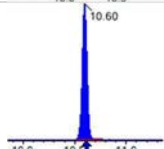
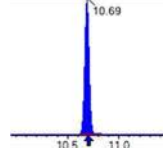
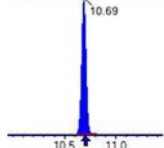
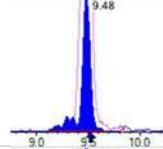
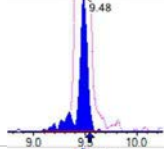
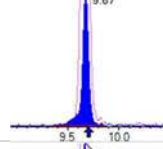
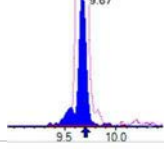
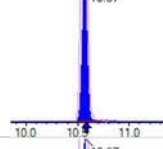
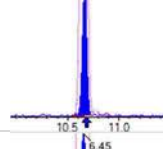
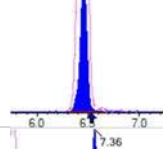
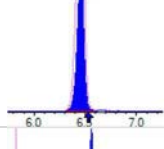
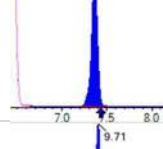
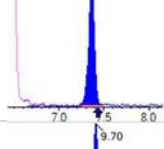
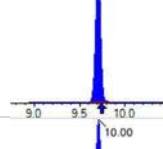
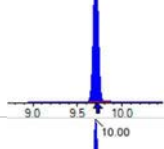
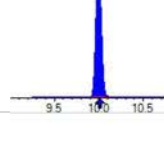
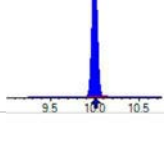
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 Acquisition Method: 1633 2022-12-21.dam

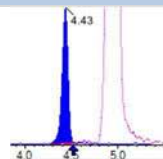
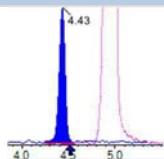
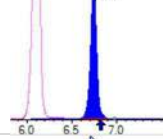
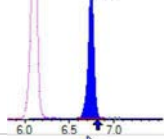
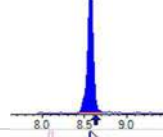
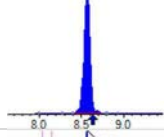
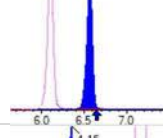
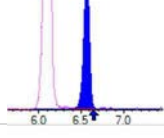
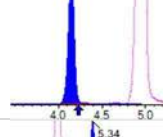
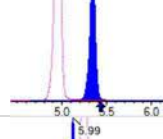
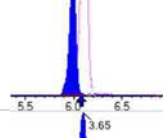
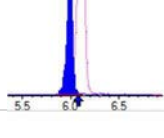
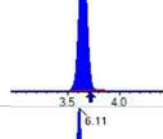
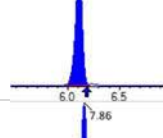
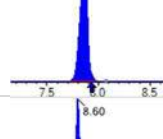
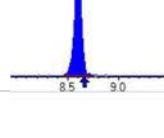
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 Acquired: 2022/12/21 - 14:39

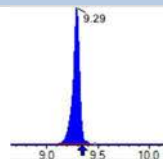
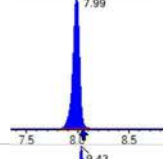
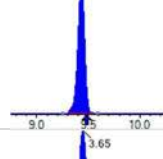
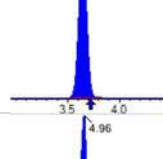
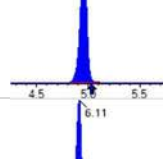
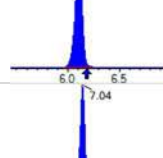
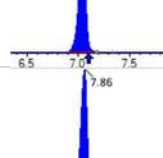
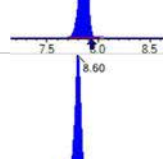
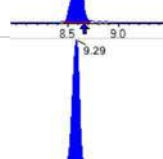
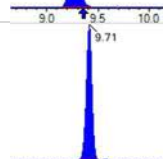

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 519161	(9.47, N/A) (N/A, -0.06, N/A)	335.3	N/A	3.6243 [4.0000]	90.6% { 101.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 461032	(9.66, N/A) (N/A, -0.03, N/A)	492.8	N/A	3.6515 [4.0000]	91.3% { 97.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 475546	(10.56, N/A) (N/A, -0.02, N/A)	945.0	N/A	20.3712 [20.0000]	101.9% { 110.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 220531	(10.65, N/A) (N/A, -0.02, N/A)	1126.5	N/A	20.7511 [20.0000]	103.8% { 120.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1159691	(6.45, N/A) (N/A, -0.08, N/A)	900.5	N/A	7.5925 [8.0000]	94.9% { 98.7% }			

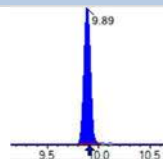
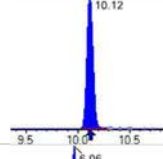
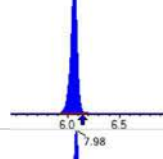
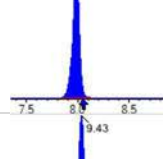
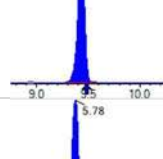
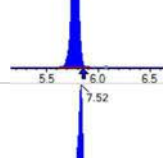
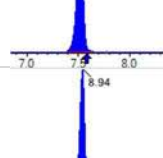
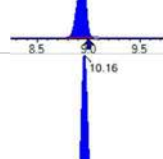
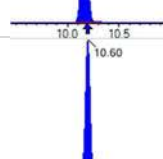
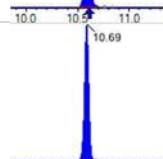

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 364131	(3.65, 1.00) (0.00, N/A, 0.0)	70.2	N/A 0.0 0.0	3.8803 [4.0000]	97.0%			
PFPeA	(262.9 / 219.0) 278554 (262.9 / 69.0) 3213	(4.96, 1.00) (0.00, N/A, -0.1)	617.6 57.0	0.0115 103.0 103.0	1.9980 [2.0000]	99.9%			
PFHxA	(313.0 / 269.0) 230736 (313.0 / 119.0) 17813	(6.11, 1.00) (0.00, N/A, 0.3)	411.0 127.8	0.0772 79.0 79.0	1.0595 [1.0000]	106.0%			
PFHpA	(363.0 / 319.0) 200810 (363.0 / 169.0) 53734	(7.04, 1.00) (0.00, N/A, 0.1)	368.9 203.8	0.2676 85.9 85.9	0.9983 [1.0000]	99.8%			
PFOA	(413.0 / 369.0) 205143 (413.0 / 169.0) 72948	(7.86, 1.00) (0.00, N/A, 0.0)	303.6 404.0	0.3556 108.8 108.8	0.9507 [1.0000]	95.1%			
PFNA	(463.0 / 419.0) 167406 (463.0 / 169.0) 35020	(8.60, 1.00) (0.00, N/A, 0.2)	279.7 86.6	0.2092 108.5 108.5	1.0679 [1.0000]	106.8%			
PFDA	(513.0 / 469.0) 260310 (513.0 / 169.0) 19191	(9.28, 1.00) (0.00, N/A, -0.3)	246.9 388.3	0.0737 77.1 77.1	0.9614 [1.0000]	96.1%			
PFUnA	(563.0 / 519.0) 242766 (563.0 / 169.0) 29112	(9.71, 1.00) (0.00, N/A, 0.0)	470.3 179.8	0.1199 138.1 138.1	0.8605 [1.0000]	86.1%			
PFDoA	(613.0 / 569.0) 276870 (613.0 / 169.0) 37204	(9.89, 1.00) (0.00, N/A, 0.1)	510.1 202.8	0.1344 96.5 96.5	0.8423 [1.0000]	84.2%			
PFTrDA	(663.0 / 619.0) 272310 (663.0 / 169.0) 51052	(10.01, 1.01) (N/A, -0.01, 0.2)	518.4 210.4	0.1875 91.6 91.6	0.9561 [1.0000]	95.6%			
PFTeDA	(713.0 / 669.0) 202539 (713.0 / 169.0) 35837	(10.12, 1.00) (0.00, N/A, -0.1)	464.6 111.3	0.1769 87.0 87.0	0.9914 [1.0000]	99.1%			

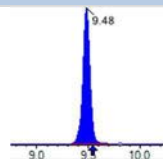
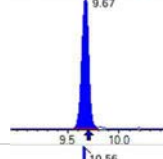
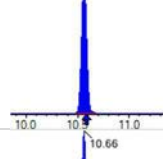
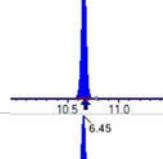
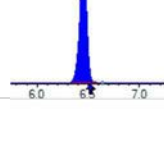
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 319512 (298.9 / 99.0) 214428	(6.06, 1.00) (0.00, N/A, 0.1)	552.7 573.6	0.6711 109.0 109.0	0.8374 [0.8847]	94.7%			
PFPeS	(349.0 / 80.0) 558156 (349.0 / 99.0) 204172	(7.11, 0.89) (N/A, -0.07, -0.2)	726.6 707.2	0.3658 102.8 102.8	0.9319 [0.9384]	99.3%			
PFHxS	(399.0 / 80.0) 460645 (399.0 / 99.0) 168480	(7.99, 1.00) (0.00, N/A, 0.2)	4071.9 6022.7	0.3657 108.8 108.8	0.8844 [0.9110]	97.1%			
PFHpS	(449.0 / 80.0) 399999 (449.0 / 99.0) 119983	(8.76, 0.93) (N/A, -0.06, -0.2)	473.2 390.9	0.3000 109.6 109.6	0.8477 [0.9514]	89.1%			
PFOS	(499.0 / 80.0) 510216 (499.0 / 99.0) 119134	(9.43, 1.00) (0.00, N/A, 0.3)	371.9 120.6	0.2335 96.0 96.0	0.8692 [0.9275]	93.7%			
PFNS	(549.0 / 80.0) 600745 (549.0 / 99.0) 129442	(9.75, 1.03) (N/A, -0.02, 0.2)	640.1 539.0	0.2155 88.3 88.3	0.9226 [0.9599]	96.1%			
PFDS	(599.0 / 80.0) 650063 (599.0 / 99.0) 165992	(9.90, 1.05) (N/A, -0.02, -0.4)	597.2 555.1	0.2553 113.4 113.4	0.8993 [0.9631]	93.4%			
PFDoS	(698.9 / 80.0) 310556 (698.9 / 99.0) 62440	(10.10, 1.07) (N/A, -0.01, 0.2)	612.5 270.2	0.2011 82.2 82.2	1.0279 [0.9696]	106.0%			
4:2FTS	(327.0 / 307.0) 734838 (327.0 / 81.0) 391330	(5.78, 1.00) (0.00, N/A, 0.0)	955.1 537.9	0.5325 107.8 107.8	3.8805 [3.7381]	103.8%			
6:2FTS	(427.0 / 407.0) 417365 (427.0 / 81.0) 267446	(7.52, 1.00) (0.00, N/A, -0.3)	653.9 548.6	0.6408 82.3 82.3	3.6814 [3.7962]	97.0%			
8:2FTS	(527.0 / 507.0) 398366 (527.0 / 81.0) 261360	(8.94, 1.00) (0.00, N/A, -0.3)	438.4 397.1	0.6561 115.9 115.9	3.3122 [3.8332]	86.4%			

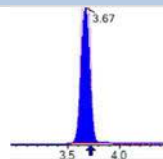
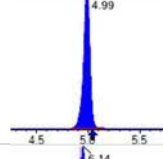
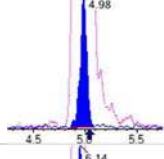
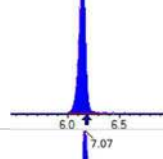
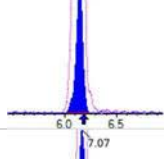
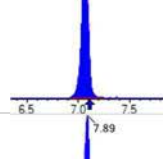
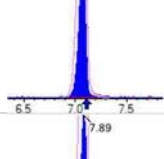
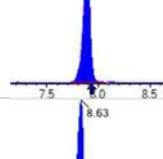
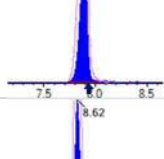
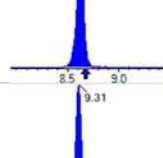
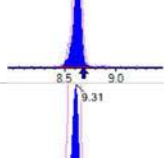
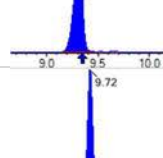
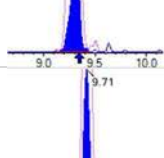
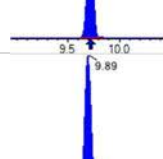
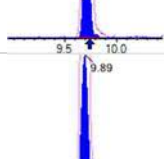
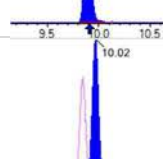
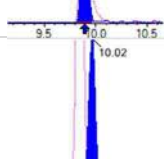
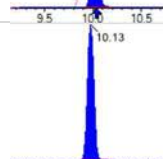
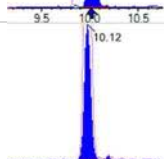
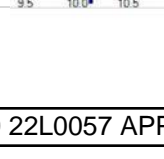
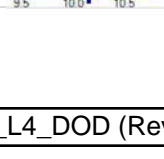
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 634394 (498.0 / 478.0) 14236	(10.16 , 1.00) (0.00 , N/A , 0.3)	672.1 142.6	0.0224 107.7 107.7	1.0186 [1.0000]	101.9%			
NMeFOSA	(511.9 / 219.0) 481844 (511.9 / 169.0) 311400	(10.60 , 1.00) (0.00 , N/A , 0.1)	1243.8 1242.2	0.6463 89.7 89.7	3.9784 [4.0000]	99.5%			
NEIFOSA	(526.0 / 219.0) 509457 (526.0 / 169.0) 556544	(10.69 , 1.00) (0.00 , N/A , 0.0)	1029.5 1040.4	1.0924 103.3 103.3	3.8752 [4.0000]	96.9%			
NMeFOSAA	(570.0 / 419.0) 98460 (570.0 / 483.0) 45291	(9.48 , 1.00) (0.00 , N/A , -0.2)	201.1 368.1	0.4600 74.8 74.8	0.9589 [1.0000]	95.9%			
NEIFOSAA	(584.0 / 419.0) 100078 (584.0 / 526.0) 64349	(9.67 , 1.00) (0.00 , N/A , 0.1)	308.0 11085.9	0.6430 87.7 87.7	0.9729 [1.0000]	97.3%			
NMeFOSE	(616.1 / 59.0) 109477	(10.57 , 1.00) (0.00 , N/A , 0.0)	635.3	N/A 0.0 0.0	4.0466 [4.0000]	101.2%			
NEtFOSE	(630.0 / 59.0) 18470	(10.67 , 1.00) (0.01 , N/A , 0.0)	332.3	N/A 0.0 0.0	3.6420 [4.0000]	91.1%			
HFPO-DA	(285.0 / 169.0) 157217 (285.0 / 185.0) 447290	(6.45 , 1.00) (0.00 , N/A , 0.0)	473.3 607.4	2.8450 103.7 103.7	1.8500 [2.0000]	92.5%			
ADONA	(377.0 / 85.0) 712997 (377.0 / 251.0) 91158	(7.36 , 1.14) (N/A , -0.07 , 0.0)	873.4 270.7	0.1279 102.7 102.7	1.8890 [1.8854]	100.2%			
9CI-Pf3ONS	(531.0 / 351.0) 2025171 (533.0 / 353.0) 608975	(9.71 , 1.50) (N/A , -0.03 , 0.1)	727.3 554.2	0.3007 101.6 101.6	1.9101 [1.8665]	102.3%			
11CI-PF3OUDS	(631.0 / 451.0) 945192 (633.0 / 453.0) 304735	(10.00 , 1.55) (N/A , -0.01 , -0.1)	1065.3 837.5	0.3224 97.5 97.5	1.7916 [1.8864]	95.0%			

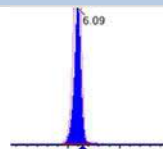
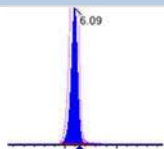
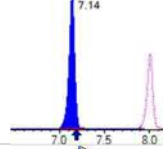
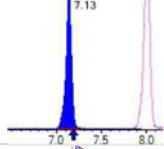
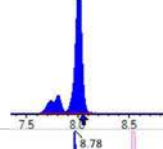
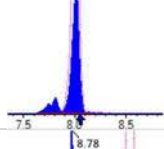
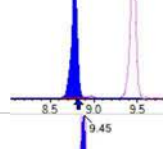
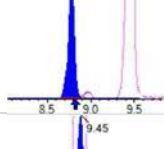
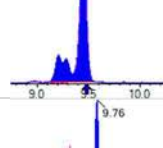
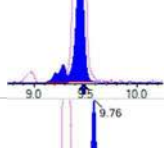
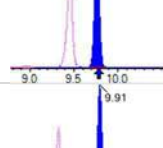
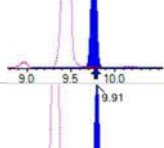
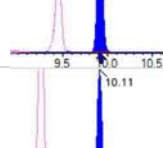
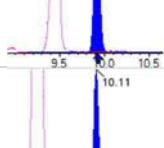
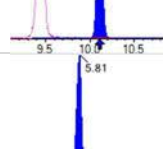
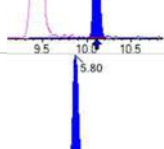
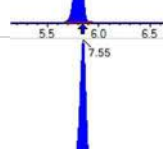
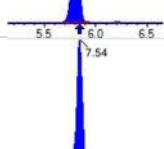
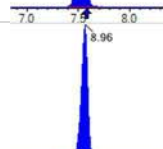
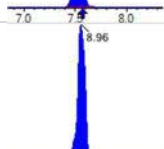

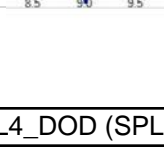
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 19424 (241.0 / 117.0) 28656	(4.43, 0.89) (N/A, -0.08, 0.0)	383.0 238.7	1.4753 88.2 88.2	4.0370 [4.0000]	100.9%			
5:3FTCA	(341.0 / 236.7) 163618 (341.0 / 217.0) 258573	(6.74, 1.10) (N/A, -0.08, -0.1)	567.6 530.2	1.5803 108.0 108.0	4.2520 [4.0000]	106.3%			
7:3FTCA	(441.0 / 317.0) 173439 (441.0 / 337.0) 148204	(8.57, 1.40) (N/A, -0.06, 0.2)	277.8 265.5	0.8545 102.0 102.0	3.9172 [4.0000]	97.9%			
PFEESA	(315.0 / 135.0) 425676 (315.0 / 83.0) 120482	(6.57, 1.08) (N/A, -0.07, 0.1)	558.7 464.3	0.2830 92.2 92.2	1.7854 [1.7849]	100.0%			
PFMPA	(229.0 / 85.0) 73196	(4.15, 0.84) (N/A, -0.08, 0.0)	797.4	N/A 0.0 0.0	1.9130 [2.0000]	95.6%			
PFMBA	(279.0 / 85.0) 259517	(5.34, 1.08) (N/A, -0.08, 0.0)	721.2	N/A 0.0 0.0	1.9622 [2.0000]	98.1%			
NFDHA	(295.0 / 201.0) 219791 (295.0 / 85.0) 199407	(5.99, 0.98) (N/A, -0.08, -0.1)	614.7 459.5	0.9073 102.8 102.8	2.0016 [2.0000]	100.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 133715	(3.65, N/A) (N/A, -0.07, N/A)	699.9	N/A	0.9606 [1.0000]	96.1% {88.1%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 210807	(6.11, N/A) (N/A, -0.08, N/A)	520.8	N/A	0.9129 [1.0000]	91.3% {90.1%}			
13C4_PFOA_IIS	(417.0 / 372.0) 203834	(7.86, N/A) (N/A, -0.07, N/A)	799.6	N/A	0.9272 [1.0000]	92.7% {85.6%}			
13C5_PFNA_IIS	(468.0 / 423.0) 176714	(8.60, N/A) (N/A, -0.07, N/A)	380.6	N/A	0.9543 [1.0000]	95.4% {87.4%}			

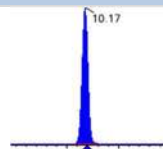
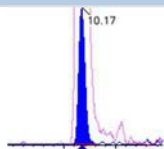
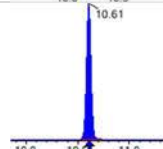
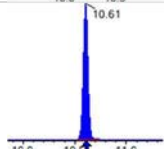
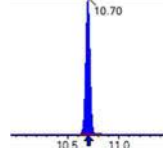
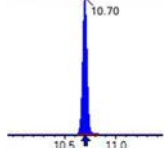
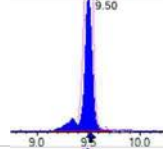
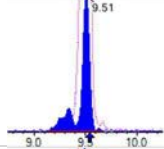
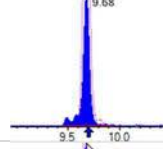
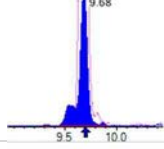
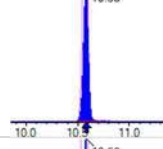
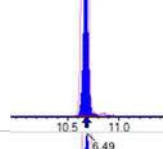
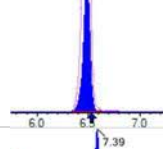
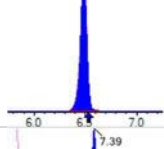
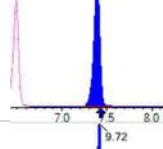
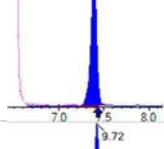
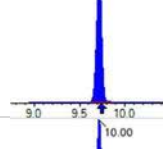
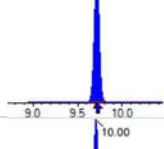
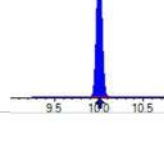
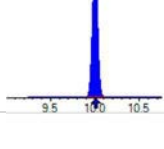
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 164172	(9.29, N/A) (N/A, -0.05, N/A)	395.8	N/A	0.8883 [1.0000]	88.8% { 94.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 382941	(7.99, N/A) (N/A, -0.06, N/A)	781.0	N/A	0.9486 [1.0000]	94.9% { 90.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 302129	(9.43, N/A) (N/A, -0.05, N/A)	425.5	N/A	0.9466 [1.0000]	94.7% { 92.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1150744	(3.65, N/A) (N/A, -0.07, N/A)	926.2	N/A	8.3617 [8.0000]	104.5% { 96.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 634958	(4.96, N/A) (N/A, -0.08, N/A)	725.6	N/A	4.3289 [4.0000]	108.2% { 91.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 507144	(6.11, N/A) (N/A, -0.08, N/A)	760.2	N/A	2.0905 [2.0000]	104.5% { 94.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 441364	(7.04, N/A) (N/A, -0.07, N/A)	592.1	N/A	2.0856 [2.0000]	104.3% { 89.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 438874	(7.86, N/A) (N/A, -0.06, N/A)	718.6	N/A	1.9633 [2.0000]	98.2% { 88.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 182699	(8.60, N/A) (N/A, -0.07, N/A)	305.7	N/A	0.9402 [1.0000]	94.0% { 83.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 284465	(9.29, N/A) (N/A, -0.06, N/A)	596.1	N/A	1.2183 [1.0000]	121.8% { 101.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 356973	(9.71, N/A) (N/A, -0.02, N/A)	765.7	N/A	1.0748 [1.0000]	107.5% { 89.6% }			

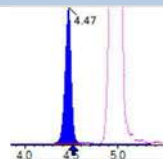
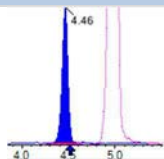
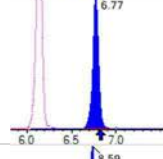
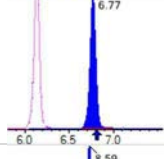
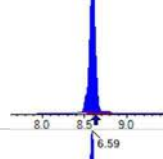
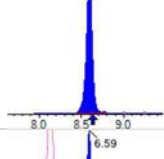
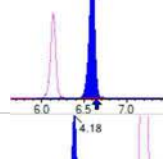
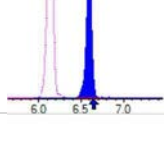
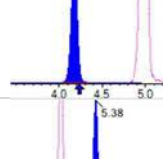
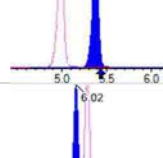
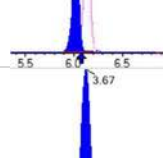
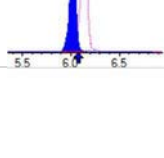
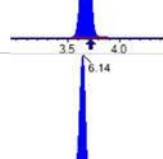
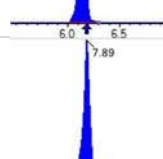
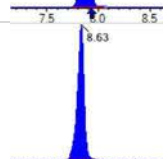

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 381316	(9.89, N/A) (N/A, -0.02, N/A)	333.2	N/A	1.1503 [1.0000]	115.0% { 98.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 230518	(10.12, N/A) (N/A, -0.02, N/A)	370.4	N/A	1.0471 [1.0000]	104.7% { 95.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1391867	(6.06, N/A) (N/A, -0.08, N/A)	799.8	N/A	2.1497 [2.0000]	107.5% { 101.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 670509	(7.98, N/A) (N/A, -0.07, N/A)	1003.2	N/A	1.9464 [2.0000]	97.3% { 88.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1081560	(9.43, N/A) (N/A, -0.05, N/A)	480.5	N/A	2.0858 [2.0000]	104.3% { 90.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 229082	(5.78, N/A) (N/A, -0.08, N/A)	619.0	N/A	4.1774 [4.0000]	104.4% { 102.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 294946	(7.52, N/A) (N/A, -0.06, N/A)	799.8	N/A	4.4673 [4.0000]	111.7% { 107.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 303660	(8.94, N/A) (N/A, -0.06, N/A)	479.0	N/A	4.5945 [4.0000]	114.9% { 102.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1318009	(10.16, N/A) (N/A, -0.02, N/A)	652.5	N/A	2.0109 [2.0000]	100.5% { 89.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 297155	(10.60, N/A) (N/A, -0.01, N/A)	855.7	N/A	2.0764 [2.0000]	103.8% { 90.0% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 291494	(10.69, N/A) (N/A, -0.01, N/A)	862.4	N/A	2.2065 [2.0000]	110.3% { 102.4% }			

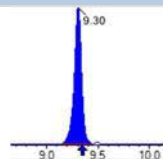
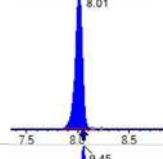
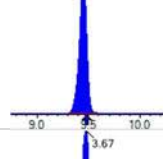
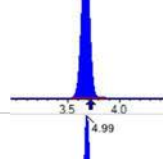
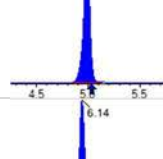
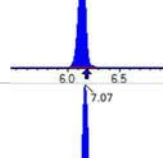
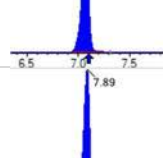
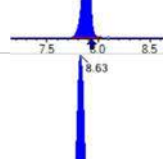
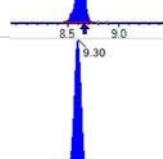
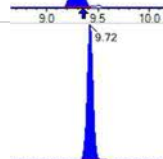

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 527024	(9.48, N/A) (N/A, -0.05, N/A)	346.8	N/A	4.2742 [4.0000]	106.9% { 103.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 458315	(9.67, N/A) (N/A, -0.02, N/A)	278.5	N/A	4.2171 [4.0000]	105.4% { 97.2% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 428676	(10.56, N/A) (N/A, -0.01, N/A)	1166.0	N/A	21.3333 [20.0000]	106.7% { 99.3% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 198093	(10.66, N/A) (N/A, -0.01, N/A)	1164.8	N/A	21.6544 [20.0000]	108.3% { 108.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1118507	(6.45, N/A) (N/A, -0.07, N/A)	638.3	N/A	8.6720 [8.0000]	108.4% { 95.2% }			

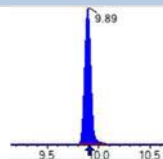
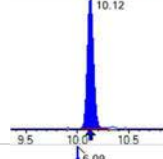
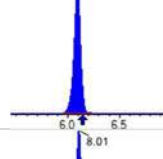
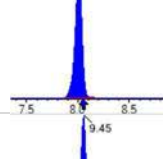
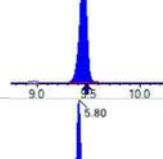
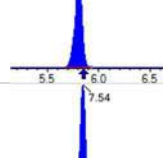
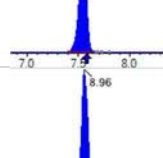
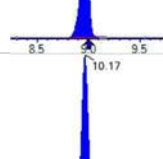
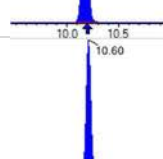
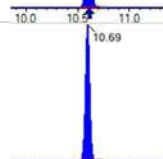

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 819896	(3.67, 1.00) (0.00, N/A, 0.0)	63.2	N/A 0.0 0.0	8.3322 [8.0000]	104.2%			
PFPeA	(262.9 / 219.0) 603288 (262.9 / 69.0) 6873	(4.99, 1.00) (0.00, N/A, 0.1)	714.5 139.6	0.0114 101.8 101.8	4.1560 [4.0000]	103.9%			
PFHxA	(313.0 / 269.0) 494481 (313.0 / 119.0) 48652	(6.14, 1.00) (0.00, N/A, -0.1)	480.7 302.7	0.0984 100.6 100.6	1.9728 [2.0000]	98.6%			
PFHpA	(363.0 / 319.0) 430799 (363.0 / 169.0) 129319	(7.07, 1.00) (0.00, N/A, -0.1)	617.2 361.9	0.3002 96.4 96.4	1.9616 [2.0000]	98.1%			
PFOA	(413.0 / 369.0) 498516 (413.0 / 169.0) 142531	(7.89, 1.00) (0.00, N/A, 0.1)	597.7 530.3	0.2859 87.5 87.5	1.9165 [2.0000]	95.8%			
PFNA	(463.0 / 419.0) 393754 (463.0 / 169.0) 83708	(8.63, 1.00) (0.00, N/A, 0.1)	416.4 106.0	0.2126 110.3 110.3	2.1745 [2.0000]	108.7%			
PFDA	(513.0 / 469.0) 564787 (513.0 / 169.0) 47750	(9.31, 1.00) (0.01, N/A, 0.1)	378.6 169.7	0.0845 88.5 88.5	2.2443 [2.0000]	112.2%			
PFUnA	(563.0 / 519.0) 658503 (563.0 / 169.0) 61653	(9.72, 1.00) (0.00, N/A, 0.4)	479.7 518.5	0.0936 107.8 107.8	2.0992 [2.0000]	105.0%			
PFDoA	(613.0 / 569.0) 675921 (613.0 / 169.0) 81123	(9.89, 1.00) (0.00, N/A, 0.2)	691.3 232.1	0.1200 86.2 86.2	1.9103 [2.0000]	95.5%			
PFTrDA	(663.0 / 619.0) 588988 (663.0 / 169.0) 110050	(10.02, 1.01) (N/A, 0.00, 0.1)	577.9 302.6	0.1868 91.3 91.3	1.9213 [2.0000]	96.1%			
PFTeDA	(713.0 / 669.0) 446345 (713.0 / 169.0) 83837	(10.13, 1.00) (0.00, N/A, 0.2)	486.0 629.5	0.1878 92.4 92.4	2.0034 [2.0000]	100.2%			

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) 711903 (298.9 / 99.0) 484739	(6.09, 1.00) (0.00, N/A, 0.1)	731.9 757.9	0.6809 110.6 110.6	1.7756 [1.7695]	100.3%			
PFPeS	(349.0 / 80.0) 1288227 (349.0 / 99.0) 474774	(7.14, 0.89) (N/A, -0.04, 0.1)	707.6 705.0	0.3685 103.5 103.5	2.0076 [1.8768]	107.0%			
PFHxS	(399.0 / 80.0) 1027828 (399.0 / 99.0) 345011	(8.01, 1.00) (0.00, N/A, 0.0)	4264.5 49182.2	0.3357 99.9 99.9	1.8419 [1.8220]	101.1%			
PFHpS	(449.0 / 80.0) 977429 (449.0 / 99.0) 288763	(8.78, 0.93) (N/A, -0.04, 0.1)	730.0 481.1	0.2954 107.9 107.9	1.9191 [1.9028]	100.9%			
PFOS	(499.0 / 80.0) 1204037 (499.0 / 99.0) 223557	(9.45, 1.00) (0.00, N/A, 0.0)	87.9 105.3	0.1857 76.3 76.3	1.9004 [1.8550]	102.4%			
PFNS	(549.0 / 80.0) 1450440 (549.0 / 99.0) 305867	(9.76, 1.03) (N/A, -0.01, 0.0)	792.8 564.7	0.2109 86.4 86.4	2.0637 [1.9198]	107.5%			
PFDS	(599.0 / 80.0) 1519940 (599.0 / 99.0) 390353	(9.91, 1.05) (N/A, -0.01, -0.1)	861.1 462.0	0.2568 114.1 114.1	1.9480 [1.9262]	101.1%			
PFDoS	(698.9 / 80.0) 616036 (698.9 / 99.0) 122817	(10.11, 1.07) (N/A, -0.01, 0.2)	806.8 368.4	0.1994 81.5 81.5	1.8891 [1.9391]	97.4%			
4:2FTS	(327.0 / 307.0) 1460214 (327.0 / 81.0) 931969	(5.81, 1.00) (0.00, N/A, 0.3)	781.6 741.8	0.6382 129.2 129.2	7.3058 [7.4762]	97.7%			
6:2FTS	(427.0 / 407.0) 816068 (427.0 / 81.0) 629698	(7.55, 1.00) (0.00, N/A, 0.2)	696.5 806.5	0.7716 99.2 99.2	8.1240 [7.5923]	107.0%			
8:2FTS	(527.0 / 507.0) 874574 (527.0 / 81.0) 575440	(8.96, 1.00) (0.00, N/A, 0.1)	521.2 496.1	0.6580 116.2 116.2	7.8272 [7.6663]	102.1%			

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
PFOSA	(498.0 / 78.0) 1485959 (498.0 / 478.0) 31674	(10.17, 1.00) (0.00, N/A, 0.2)	990.0 142.4	0.0213 102.3 102.3	2.1663 [2.0000]	108.3%			
NMeFOSA	(511.9 / 219.0) 1078575 (511.9 / 169.0) 708121	(10.61, 1.00) (0.00, N/A, 0.0)	1225.7 994.7	0.6565 91.2 91.2	8.7756 [8.0000]	109.7%			
NEIFOSA	(526.0 / 219.0) 1148331 (526.0 / 169.0) 1200365	(10.70, 1.00) (0.00, N/A, 0.0)	776.2 1306.9	1.0453 98.8 98.8	8.6933 [8.0000]	108.7%			
NMeFOSAA	(570.0 / 419.0) 241345 (570.0 / 483.0) 110259	(9.50, 1.00) (0.00, N/A, -0.4)	387.8 310.6	0.4569 74.3 74.3	2.3829 [2.0000]	119.1%			
NEIFOSAA	(584.0 / 419.0) 216496 (584.0 / 526.0) 131164	(9.68, 1.00) (0.00, N/A, -0.3)	488.0 17276.9	0.6059 82.6 82.6	1.8426 [2.0000]	92.1%			
NMeFOSE	(616.1 / 59.0) 263519	(10.58, 1.00) (0.01, N/A, 0.0)	1098.0	N/A 0.0 0.0	8.8080 [8.0000]	110.1%			
NEtFOSE	(630.0 / 59.0) 44341	(10.68, 1.00) (0.01, N/A, 0.0)	785.9	N/A 0.0 0.0	8.2657 [8.0000]	103.3%			
HFPO-DA	(285.0 / 169.0) 361196 (285.0 / 185.0) 1050555	(6.49, 1.00) (0.00, N/A, 0.1)	772.7 816.6	2.9085 106.0 106.0	4.2149 [4.0000]	105.4%			
ADONA	(377.0 / 85.0) 1531070 (377.0 / 251.0) 192620	(7.39, 1.14) (N/A, -0.04, 0.0)	808.7 452.2	0.1258 101.0 101.0	4.0224 [3.7708]	106.7%			
9CI-Pf3ONS	(531.0 / 351.0) 4127226 (533.0 / 353.0) 1353329	(9.72, 1.50) (N/A, -0.01, 0.1)	633.0 677.8	0.3279 110.8 110.8	3.9027 [3.7330]	104.5%			
11CI-PF3OUDS	(631.0 / 451.0) 2164994 (633.0 / 453.0) 639114	(10.00, 1.54) (N/A, -0.01, 0.2)	1045.2 822.2	0.2952 89.2 89.2	4.0695 [3.7728]	107.9%			

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) 40453 (241.0 / 117.0) 66448	(4.47, 0.90) (N/A, -0.05, 0.1)	490.7 413.9	1.6426 98.2 98.2	8.0746 [8.0000]	100.9%			
5:3FTCA	(341.0 / 236.7) 329758 (341.0 / 217.0) 527254	(6.77, 1.10) (N/A, -0.05, 0.1)	661.0 537.3	1.5989 109.2 109.2	7.4457 [8.0000]	93.1%			
7:3FTCA	(441.0 / 317.0) 392499 (441.0 / 337.0) 316116	(8.59, 1.40) (N/A, -0.04, 0.1)	337.8 309.6	0.8054 96.2 96.2	7.7021 [8.0000]	96.3%			
PFEESA	(315.0 / 135.0) 963848 (315.0 / 83.0) 290484	(6.59, 1.07) (N/A, -0.05, 0.0)	701.2 684.7	0.3014 98.2 98.2	3.5124 [3.5698]	98.4%			
PFMPA	(229.0 / 85.0) 159859	(4.18, 0.84) (N/A, -0.05, 0.0)	785.7	N/A 0.0 0.0	4.0125 [4.0000]	100.3%			
PFMBA	(279.0 / 85.0) 557038	(5.38, 1.08) (N/A, -0.05, 0.0)	765.0	N/A 0.0 0.0	4.0451 [4.0000]	101.1%			
NFDHA	(295.0 / 201.0) 513792 (295.0 / 85.0) 442175	(6.02, 0.98) (N/A, -0.05, 0.0)	639.9 677.3	0.8606 97.5 97.5	4.0653 [4.0000]	101.6%			
13C3_PFBA_IIS	(216.0 / 172.0) 147062	(3.67, N/A) (N/A, -0.05, N/A)	798.2	N/A	1.0565 [1.0000]	105.7% { 96.9% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 235070	(6.14, N/A) (N/A, -0.04, N/A)	582.4	N/A	1.0180 [1.0000]	101.8% { 100.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 228180	(7.89, N/A) (N/A, -0.04, N/A)	542.9	N/A	1.0379 [1.0000]	103.8% { 95.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 190318	(8.63, N/A) (N/A, -0.04, N/A)	398.2	N/A	1.0277 [1.0000]	102.8% { 94.1% }			

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_IIS	(515.1 / 470.1) 163196	(9.30, N/A) (N/A, -0.04, N/A)	351.2	N/A	0.8831 [1.0000]	88.3% { 93.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 399114	(8.01, N/A) (N/A, -0.04, N/A)	644.1	N/A	0.9886 [1.0000]	98.9% { 94.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 313371	(9.45, N/A) (N/A, -0.03, N/A)	470.2	N/A	0.9818 [1.0000]	98.2% { 95.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1206655	(3.67, N/A) (N/A, -0.05, N/A)	920.8	N/A	7.9721 [8.0000]	99.7% { 101.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 661139	(4.99, N/A) (N/A, -0.05, N/A)	803.5	N/A	4.0422 [4.0000]	101.1% { 95.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 583697	(6.14, N/A) (N/A, -0.05, N/A)	813.5	N/A	2.1578 [2.0000]	107.9% { 108.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 481858	(7.07, N/A) (N/A, -0.04, N/A)	625.4	N/A	2.0419 [2.0000]	102.1% { 98.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 529026	(7.89, N/A) (N/A, -0.04, N/A)	717.1	N/A	2.1141 [2.0000]	105.7% { 106.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 211031	(8.63, N/A) (N/A, -0.04, N/A)	522.0	N/A	1.0084 [1.0000]	100.8% { 96.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 264380	(9.30, N/A) (N/A, -0.04, N/A)	286.1	N/A	1.1391 [1.0000]	113.9% { 94.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 396942	(9.72, N/A) (N/A, -0.01, N/A)	636.0	N/A	1.2023 [1.0000]	120.2% { 99.7% }			

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_EIS	(615.0 / 570.0) 410435	(9.89, N/A) (N/A, -0.01, N/A)	625.4	N/A	1.2456 [1.0000]	124.6% { 105.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 251385	(10.12, N/A) (N/A, -0.01, N/A)	364.3	N/A	1.1487 [1.0000]	114.9% { 103.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1462627	(6.09, N/A) (N/A, -0.05, N/A)	798.2	N/A	2.1675 [2.0000]	108.4% { 106.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 718366	(8.01, N/A) (N/A, -0.04, N/A)	884.3	N/A	2.0008 [2.0000]	100.0% { 95.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1167403	(9.45, N/A) (N/A, -0.03, N/A)	347.8	N/A	2.1706 [2.0000]	108.5% { 98.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 241790	(5.80, N/A) (N/A, -0.05, N/A)	780.0	N/A	4.2305 [4.0000]	105.8% { 107.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 261330	(7.54, N/A) (N/A, -0.04, N/A)	519.2	N/A	3.7978 [4.0000]	94.9% { 95.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 282103	(8.96, N/A) (N/A, -0.04, N/A)	454.9	N/A	4.0954 [4.0000]	102.4% { 95.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1451627	(10.17, N/A) (N/A, -0.01, N/A)	856.3	N/A	2.1353 [2.0000]	106.8% { 99.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 301552	(10.60, N/A) (N/A, 0.00, N/A)	1022.7	N/A	2.0316 [2.0000]	101.6% { 91.4% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 292885	(10.69, N/A) (N/A, 0.00, N/A)	1224.3	N/A	2.1375 [2.0000]	106.9% { 102.9% }			

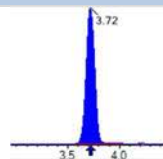
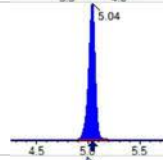
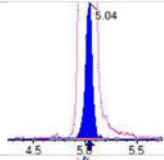
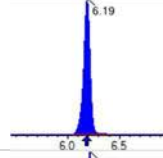
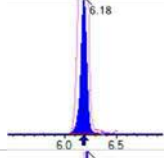
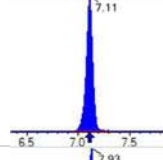
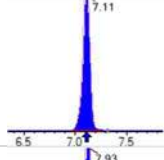
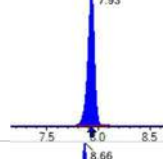
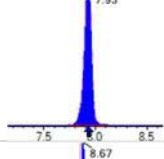
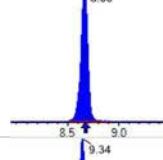
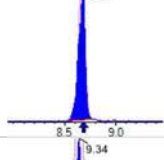
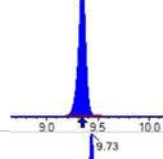
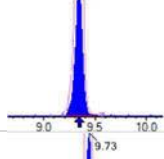
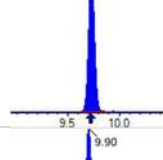
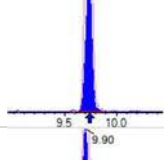
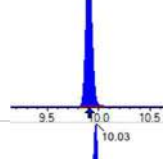
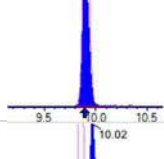
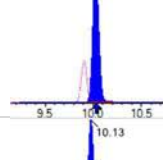
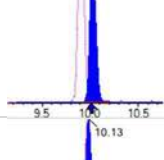
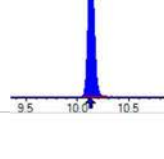
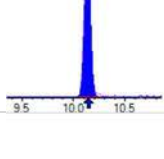


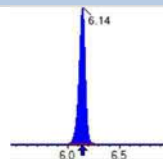
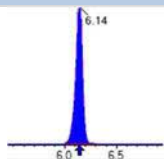
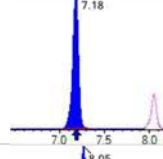
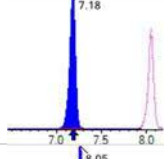
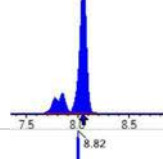
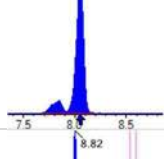
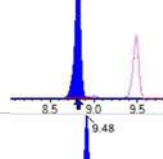
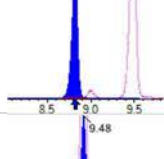
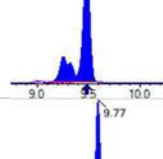
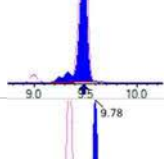
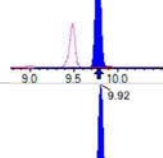
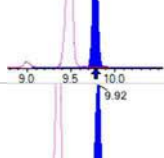
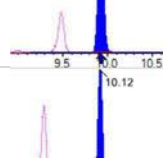
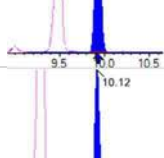
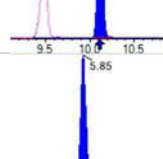
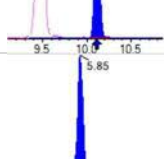
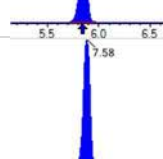
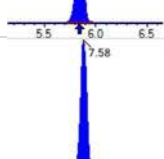
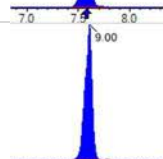
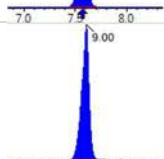
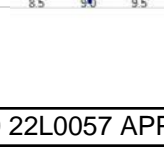
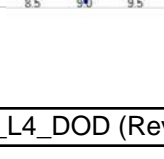
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 Instrument: Saphira
 Type: Sciex Q3 5500

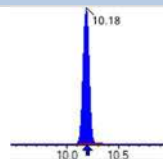
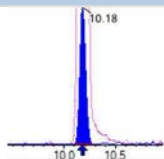
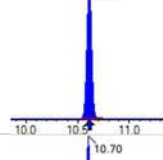
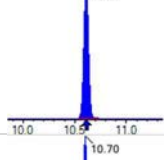
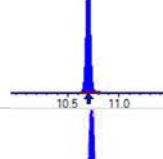
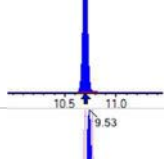
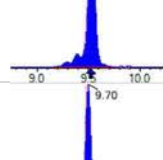
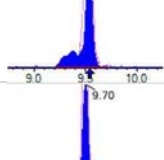
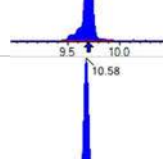
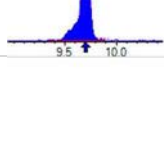
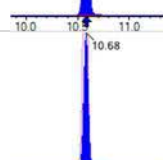
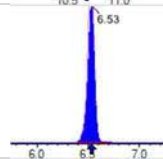
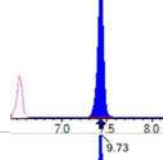
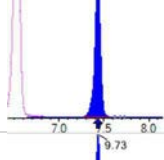
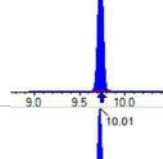
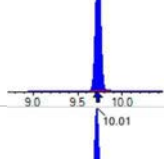
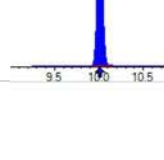
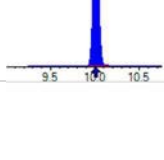
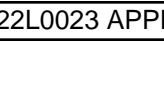
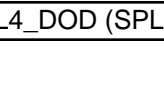
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 Acquisition Method: 1633 2022-12-21.dam

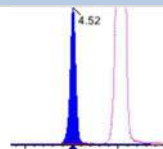
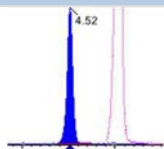
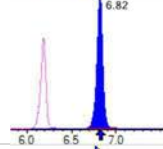
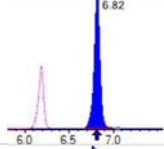
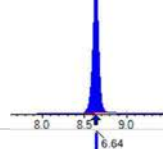
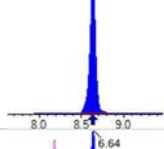
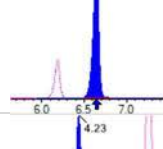
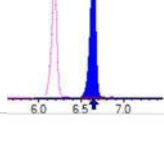
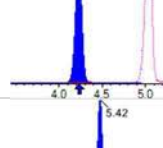
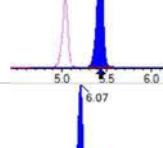
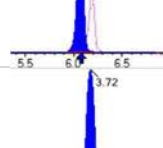
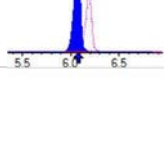
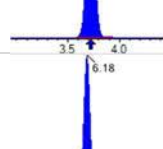
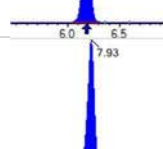
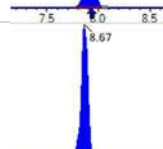

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 Path: S2022-12-21A (4)
 Acquired: 2022/12/21 - 15:04

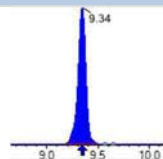
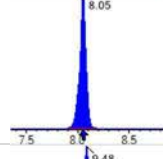
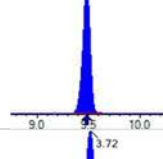
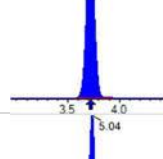
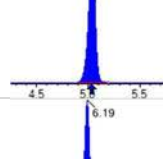
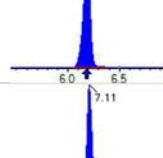
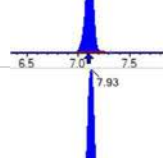
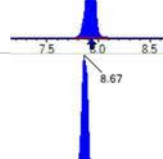
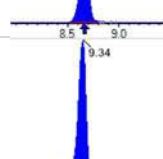
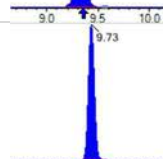

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 519867	(9.50, N/A) (N/A, -0.03, N/A)	351.6	N/A	4.0649 [4.0000]	101.6% { 101.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 523494	(9.68, N/A) (N/A, -0.01, N/A)	328.8	N/A	4.6440 [4.0000]	116.1% { 111.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 474063	(10.57, N/A) (N/A, 0.00, N/A)	906.7	N/A	22.7456 [20.0000]	113.7% { 109.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 209537	(10.67, N/A) (N/A, -0.01, N/A)	1132.4	N/A	22.0836 [20.0000]	110.4% { 114.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1127924	(6.49, N/A) (N/A, -0.04, N/A)	814.1	N/A	7.8424 [8.0000]	98.0% { 96.0% }			

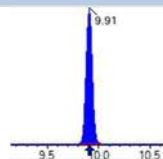
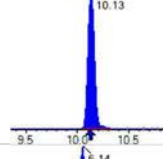
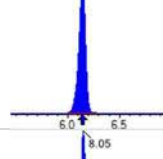
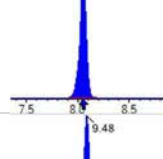
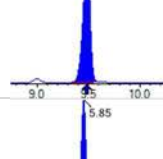
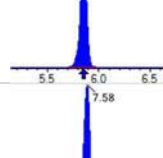
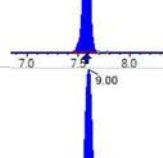
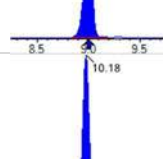
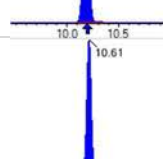
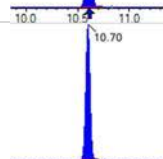

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 1990225	(3.72, 1.00) (0.00, N/A, 0.0)	64.8	N/A 0.0 0.0	20.4982 [20.0000]	102.5%			
PFPeA	(262.9 / 219.0) 1442100 (262.9 / 69.0) 16141	(5.04, 1.00) (0.00, N/A, 0.1)	681.9 331.7	0.0112 100.0 100.0	9.4373 [10.0000]	94.4%			
PFHxA	(313.0 / 269.0) 1106970 (313.0 / 119.0) 108235	(6.19, 1.00) (0.00, N/A, 0.1)	659.6 460.1	0.0978 100.0 100.0	4.7836 [5.0000]	95.7%			
PFHpA	(363.0 / 319.0) 1091562 (363.0 / 169.0) 339999	(7.11, 1.00) (0.00, N/A, 0.0)	794.0 590.8	0.3115 100.0 100.0	4.8774 [5.0000]	97.5%			
PFOA	(413.0 / 369.0) 1178218 (413.0 / 169.0) 385050	(7.93, 1.00) (0.00, N/A, 0.1)	590.9 623.3	0.3268 100.0 100.0	4.8153 [5.0000]	96.3%			
PFNA	(463.0 / 419.0) 1009822 (463.0 / 169.0) 194634	(8.66, 1.00) (0.00, N/A, -0.5)	531.9 118.3	0.1927 100.0 100.0	5.3804 [5.0000]	107.6%			
PFDA	(513.0 / 469.0) 1239600 (513.0 / 169.0) 118484	(9.34, 1.00) (0.00, N/A, 0.1)	438.5 380.8	0.0956 100.0 100.0	4.6297 [5.0000]	92.6%			
PFUnA	(563.0 / 519.0) 1546203 (563.0 / 169.0) 134285	(9.73, 1.00) (0.00, N/A, -0.2)	836.4 434.5	0.0868 100.0 100.0	4.9118 [5.0000]	98.2%			
PFDoA	(613.0 / 569.0) 1581806 (613.0 / 169.0) 220234	(9.90, 1.00) (0.00, N/A, 0.1)	474.2 387.0	0.1392 100.0 100.0	4.7333 [5.0000]	94.7%			
PFTrDA	(663.0 / 619.0) 1328428 (663.0 / 169.0) 271899	(10.03, 1.01) (N/A, 0.00, 0.0)	609.2 325.8	0.2047 100.0 100.0	4.5881 [5.0000]	91.8%			
PFTeDA	(713.0 / 669.0) 1063699 (713.0 / 169.0) 216340	(10.13, 1.00) (0.00, N/A, -0.2)	630.3 402.5	0.2034 100.0 100.0	4.9622 [5.0000]	99.2%			

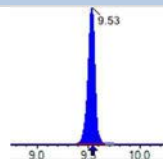
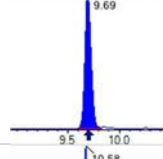
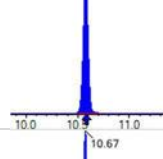
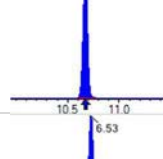
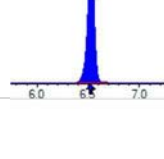
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 1813615 (298.9 / 99.0) 1116198	(6.14, 1.00) (0.00, N/A, 0.0)	768.3 703.2	0.6155 100.0 100.0	4.8171 [4.4237]	108.9%			
PFPeS	(349.0 / 80.0) 3187262 (349.0 / 99.0) 1134601	(7.18, 0.89) (N/A, 0.00, 0.0)	946.8 863.6	0.3560 100.0 100.0	4.7330 [4.6919]	100.9%			
PFHxS	(399.0 / 80.0) 2633681 (399.0 / 99.0) 885281	(8.05, 1.00) (0.00, N/A, 0.1)	3311.5 3041.5	0.3361 100.0 100.0	4.4972 [4.5549]	98.7%			
PFHpS	(449.0 / 80.0) 2438304 (449.0 / 99.0) 667404	(8.82, 0.93) (N/A, 0.00, 0.1)	775.3 642.6	0.2737 100.0 100.0	4.6954 [4.7570]	98.7%			
PFOS	(499.0 / 80.0) 2788138 (499.0 / 99.0) 678060	(9.48, 1.00) (0.00, N/A, 0.1)	106.0 147.7	0.2432 100.0 100.0	4.3161 [4.6375]	93.1%			
PFNS	(549.0 / 80.0) 3204059 (549.0 / 99.0) 781912	(9.77, 1.03) (N/A, 0.00, -0.2)	897.4 623.4	0.2440 100.0 100.0	4.4712 [4.7994]	93.2%			
PFDS	(599.0 / 80.0) 3838984 (599.0 / 99.0) 864091	(9.92, 1.05) (N/A, 0.00, -0.1)	900.9 980.5	0.2251 100.0 100.0	4.8256 [4.8155]	100.2%			
PFDoS	(698.9 / 80.0) 1471553 (698.9 / 99.0) 360040	(10.12, 1.07) (N/A, 0.00, 0.1)	998.7 645.8	0.2447 100.0 100.0	4.4257 [4.8478]	91.3%			
4:2FTS	(327.0 / 307.0) 4028733 (327.0 / 81.0) 1990132	(5.85, 1.00) (0.00, N/A, -0.1)	873.0 781.7	0.4940 100.0 100.0	21.7465 [18.6906]	116.4%			
6:2FTS	(427.0 / 407.0) 1996255 (427.0 / 81.0) 1553538	(7.58, 1.00) (0.00, N/A, 0.1)	795.2 949.1	0.7782 100.0 100.0	18.9232 [18.9808]	99.7%			
8:2FTS	(527.0 / 507.0) 2012330 (527.0 / 81.0) 1139036	(9.00, 1.00) (0.00, N/A, 0.0)	497.7 645.4	0.5660 100.0 100.0	17.1622 [19.1658]	89.5%			

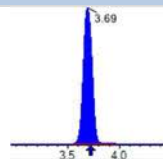
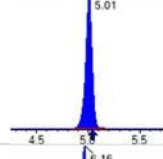
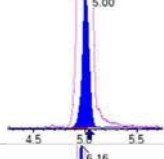
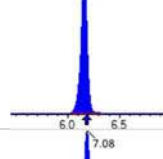
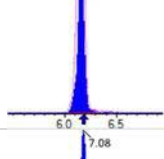
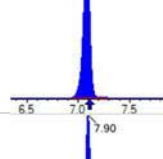
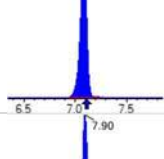
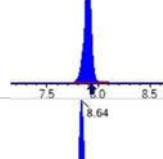
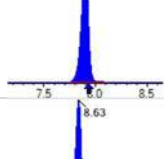
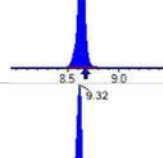
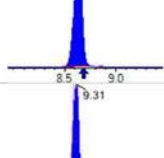
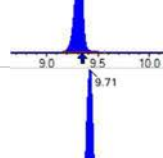
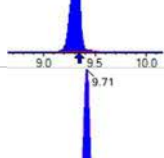
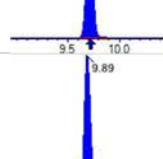
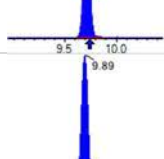
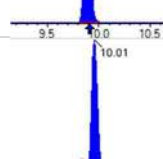
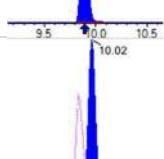
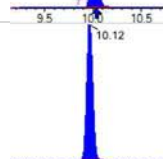
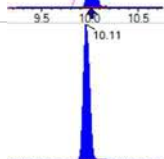
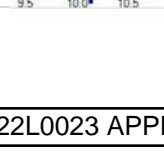
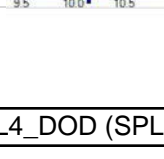
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 3270792 (498.0 / 478.0) 68177	(10.18, 1.00) (0.00, N/A, 0.2)	829.1 239.1	0.0208 100.0 100.0	4.7234 [5.0000]	94.5%			
NMeFOSA	(511.9 / 219.0) 2491137 (511.9 / 169.0) 1794272	(10.61, 1.00) (0.00, N/A, 0.0)	1462.0 1077.7	0.7203 100.0 100.0	18.5213 [20.0000]	92.6%			
NEIFOSA	(526.0 / 219.0) 2678351 (526.0 / 169.0) 2632868	(10.70, 1.00) (0.00, N/A, 0.1)	1554.8 1249.8	1.0577 100.0 100.0	20.8662 [20.0000]	104.3%			
NMeFOSAA	(570.0 / 419.0) 486745 (570.0 / 483.0) 299202	(9.53, 1.00) (0.00, N/A, -0.2)	573.1 562.9	0.6147 100.0 100.0	4.8937 [5.0000]	97.9%			
NEIFOSAA	(584.0 / 419.0) 490783 (584.0 / 526.0) 359842	(9.70, 1.00) (0.00, N/A, -0.1)	632.4 1809.1	0.7332 100.0 100.0	4.6394 [5.0000]	92.8%			
NMeFOSE	(616.1 / 59.0) 543390	(10.58, 1.00) (0.01, N/A, 0.0)	1051.7	N/A 0.0 0.0	19.9513 [20.0000]	99.8%			
NEtFOSE	(630.0 / 59.0) 87164	(10.68, 1.00) (0.01, N/A, 0.0)	921.6	N/A 0.0 0.0	18.6613 [20.0000]	93.3%			
HFPO-DA	(285.0 / 169.0) 898919 (285.0 / 185.0) 2467337	(6.53, 1.00) (0.00, N/A, 0.1)	856.6 806.8	2.7448 100.0 100.0	10.0733 [10.0000]	100.7%			
ADONA	(377.0 / 85.0) 3868840 (377.0 / 251.0) 481766	(7.43, 1.14) (N/A, 0.00, 0.0)	954.1 756.2	0.1245 100.0 100.0	9.7608 [9.4270]	103.5%			
9CI-Pf3ONS	(531.0 / 351.0) 10282118 (533.0 / 353.0) 3043082	(9.73, 1.49) (N/A, 0.00, 0.1)	1040.7 769.1	0.2960 100.0 100.0	9.5629 [9.3325]	102.5%			
11CI-PF3OUDS	(631.0 / 451.0) 5063261 (633.0 / 453.0) 1675005	(10.01, 1.53) (N/A, 0.00, 0.0)	1182.7 681.6	0.3308 100.0 100.0	9.1397 [9.4321]	96.9%			

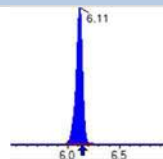
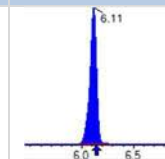
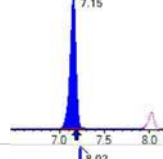
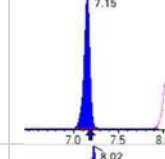
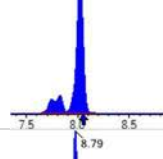
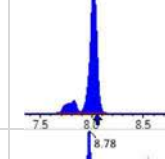
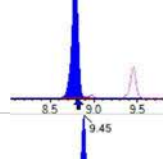
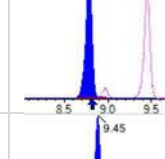
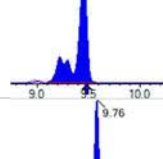
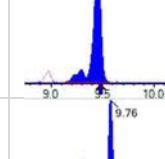
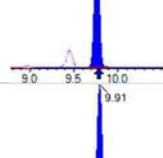
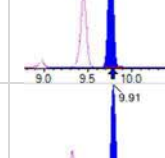
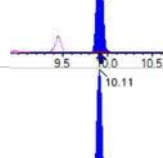
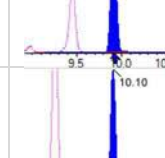
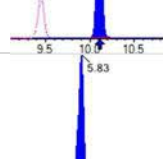
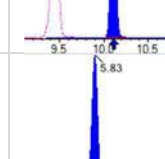
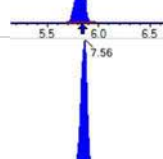
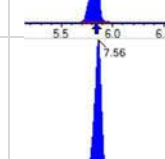
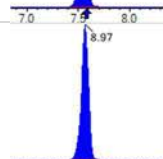
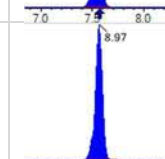

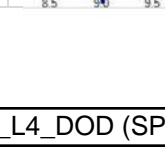
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 99522 (241.0 / 117.0) 166546	(4.52, 0.90) (N/A, 0.00, 0.0)	656.3 515.8	1.6734 100.0 100.0	18.8712 [20.0000]	94.4%			
5:3FTCA	(341.0 / 236.7) 874302 (341.0 / 217.0) 1279737	(6.82, 1.10) (N/A, 0.00, 0.1)	614.2 617.8	1.4637 100.0 100.0	21.3819 [20.0000]	106.9%			
7:3FTCA	(441.0 / 317.0) 962379 (441.0 / 337.0) 805964	(8.63, 1.40) (N/A, 0.00, 0.0)	516.9 404.8	0.8375 100.0 100.0	20.4549 [20.0000]	102.3%			
PFEESA	(315.0 / 135.0) 2085285 (315.0 / 83.0) 640190	(6.64, 1.07) (N/A, 0.00, 0.1)	832.1 689.8	0.3070 100.0 100.0	8.2307 [8.9246]	92.2%			
PFMPA	(229.0 / 85.0) 396790	(4.23, 0.84) (N/A, 0.00, 0.0)	1072.7	N/A 0.0 0.0	9.4611 [10.0000]	94.6%			
PFMBA	(279.0 / 85.0) 1416279	(5.42, 1.08) (N/A, 0.00, 0.0)	830.4	N/A 0.0 0.0	9.7700 [10.0000]	97.7%			
NFDHA	(295.0 / 201.0) 1199740 (295.0 / 85.0) 1059117	(6.07, 0.98) (N/A, 0.00, 0.0)	939.5 917.5	0.8828 100.0 100.0	10.2818 [10.0000]	102.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 151758	(3.72, N/A) (N/A, 0.00, N/A)	805.9	N/A	1.0903 [1.0000]	109.0% { 100.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 233958	(6.18, N/A) (N/A, 0.00, N/A)	558.9	N/A	1.0132 [1.0000]	101.3% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 238020	(7.93, N/A) (N/A, 0.00, N/A)	686.2	N/A	1.0827 [1.0000]	108.3% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 202298	(8.67, N/A) (N/A, 0.00, N/A)	356.6	N/A	1.0924 [1.0000]	109.2% { 100.0% }			

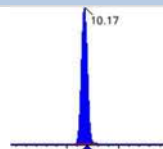
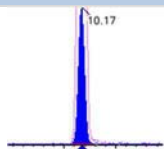
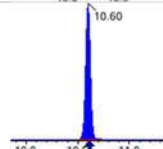
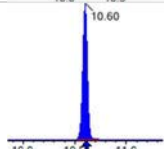
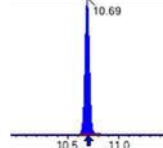
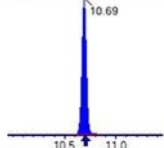
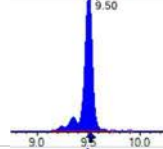
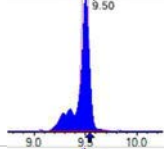
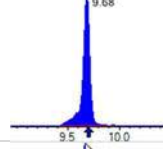
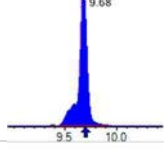
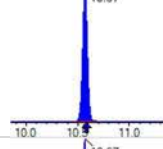
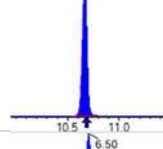
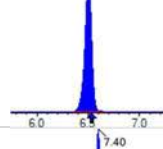
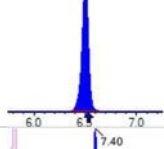
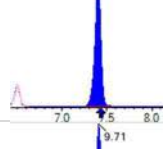
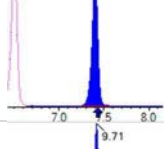
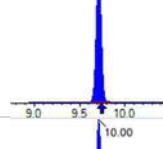
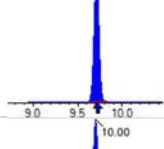
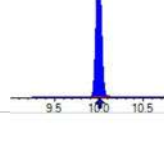
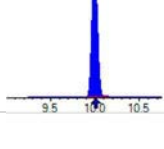
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 173856	(9.34, N/A) (N/A, 0.00, N/A)	302.9	N/A	0.9407 [1.0000]	94.1% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 422692	(8.05, N/A) (N/A, 0.00, N/A)	772.0	N/A	1.0470 [1.0000]	104.7% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 327849	(9.48, N/A) (N/A, 0.00, N/A)	486.2	N/A	1.0272 [1.0000]	102.7% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1190617	(3.72, N/A) (N/A, 0.00, N/A)	806.1	N/A	7.6228 [8.0000]	95.3% { 100.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 695964	(5.04, N/A) (N/A, 0.00, N/A)	743.0	N/A	4.2753 [4.0000]	106.9% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 538902	(6.19, N/A) (N/A, 0.00, N/A)	577.5	N/A	2.0016 [2.0000]	100.1% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 491038	(7.11, N/A) (N/A, 0.00, N/A)	663.4	N/A	2.0907 [2.0000]	104.5% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 497637	(7.93, N/A) (N/A, 0.00, N/A)	494.4	N/A	1.9065 [2.0000]	95.3% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 218730	(8.67, N/A) (N/A, 0.00, N/A)	468.8	N/A	0.9833 [1.0000]	98.3% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 281293	(9.34, N/A) (N/A, 0.00, N/A)	304.6	N/A	1.1376 [1.0000]	113.8% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 398330	(9.73, N/A) (N/A, 0.00, N/A)	590.9	N/A	1.1326 [1.0000]	113.3% { 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
13C2_PFDa_EIS	(615.0 / 570.0) 387652	(9.91, N/A) (N/A, 0.00, N/A)	408.6	N/A	1.1043 [1.0000]	110.4% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 241867	(10.13, N/A) (N/A, 0.00, N/A)	473.7	N/A	1.0375 [1.0000]	103.7% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1373432	(6.14, N/A) (N/A, 0.00, N/A)	693.8	N/A	1.9218 [2.0000]	96.1% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 753903	(8.05, N/A) (N/A, 0.00, N/A)	856.1	N/A	1.9827 [2.0000]	99.1% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1190292	(9.48, N/A) (N/A, 0.00, N/A)	261.7	N/A	2.1154 [2.0000]	105.8% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 224114	(5.85, N/A) (N/A, 0.00, N/A)	886.7	N/A	3.7025 [4.0000]	92.6% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 274445	(7.58, N/A) (N/A, 0.00, N/A)	671.5	N/A	3.7659 [4.0000]	94.1% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 296038	(9.00, N/A) (N/A, 0.00, N/A)	428.2	N/A	4.0579 [4.0000]	101.4% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1465391	(10.18, N/A) (N/A, 0.00, N/A)	879.9	N/A	2.0603 [2.0000]	103.0% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 330001	(10.61, N/A) (N/A, 0.00, N/A)	806.2	N/A	2.1251 [2.0000]	106.3% { 100.0% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 284603	(10.70, N/A) (N/A, 0.00, N/A)	963.7	N/A	1.9853 [2.0000]	99.3% { 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
D3_MeFOSAA_EIS	(573.0 / 419.0) 510539	(9.53, N/A) (N/A, 0.00, N/A)	423.7	N/A	3.8157 [4.0000]	95.4% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 471317	(9.69, N/A) (N/A, 0.00, N/A)	312.2	N/A	3.9965 [4.0000]	99.9% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 431560	(10.58, N/A) (N/A, 0.00, N/A)	1437.5	N/A	19.7920 [20.0000]	99.0% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 182445	(10.67, N/A) (N/A, 0.00, N/A)	924.0	N/A	18.3793 [20.0000]	91.9% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1174542	(6.53, N/A) (N/A, 0.00, N/A)	891.8	N/A	8.2053 [8.0000]	102.6% { 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) 4050226	(3.69, 1.00) (0.00, N/A, 0.0)	65.3	N/A 0.0 0.0	42.6736 [40.0000]	106.7%			
PFPeA	(262.9 / 219.0) 2824768 (262.9 / 69.0) 30797	(5.01, 1.00) (0.00, N/A, 0.2)	725.3 354.5	0.0109 97.4 97.4	19.8721 [20.0000]	99.4%			
PFHxA	(313.0 / 269.0) 2355853 (313.0 / 119.0) 216426	(6.16, 1.00) (0.00, N/A, 0.1)	630.0 576.1	0.0919 94.0 94.0	9.7663 [10.0000]	97.7%			
PFHpA	(363.0 / 319.0) 2097907 (363.0 / 169.0) 669756	(7.08, 1.00) (0.00, N/A, 0.1)	650.6 555.8	0.3192 102.5 102.5	9.6572 [10.0000]	96.6%			
PFOA	(413.0 / 369.0) 2460865 (413.0 / 169.0) 754807	(7.90, 1.00) (0.00, N/A, 0.0)	797.2 515.8	0.3067 93.9 93.9	10.0578 [10.0000]	100.6%			
PFNA	(463.0 / 419.0) 1917681 (463.0 / 169.0) 398931	(8.64, 1.00) (0.00, N/A, 0.0)	698.0 110.9	0.2080 107.9 107.9	9.9870 [10.0000]	99.9%			
PFDA	(513.0 / 469.0) 2731475 (513.0 / 169.0) 237718	(9.32, 1.00) (0.01, N/A, 0.1)	431.9 384.2	0.0870 91.1 91.1	10.5011 [10.0000]	105.0%			
PFUnA	(563.0 / 519.0) 2762959 (563.0 / 169.0) 281752	(9.71, 1.00) (0.00, N/A, 0.0)	678.3 368.4	0.1020 117.4 117.4	10.3620 [10.0000]	103.6%			
PFDoA	(613.0 / 569.0) 3158081 (613.0 / 169.0) 408270	(9.89, 1.00) (0.00, N/A, -0.3)	740.9 505.8	0.1293 92.9 92.9	10.5649 [10.0000]	105.6%			
PFTrDA	(663.0 / 619.0) 2750923 (663.0 / 169.0) 615527	(10.01, 1.01) (N/A, -0.01, -0.3)	922.1 622.7	0.2238 109.3 109.3	10.6219 [10.0000]	106.2%			
PFTeDA	(713.0 / 669.0) 2392662 (713.0 / 169.0) 396949	(10.12, 1.00) (0.00, N/A, 0.2)	784.4 530.3	0.1659 81.6 81.6	12.1566 [10.0000]	121.6%			

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) 3499294 (298.9 / 99.0) 2162960	(6.11, 1.00) (0.00, N/A, 0.0)	782.7 712.1	0.6181 100.4 100.4	9.3608 [8.8473]	105.8%			
PFPeS	(349.0 / 80.0) 6311120 (349.0 / 99.0) 2220135	(7.15, 0.89) (N/A, -0.03, 0.0)	774.9 858.6	0.3518 98.8 98.8	9.3269 [9.3838]	99.4%			
PFHxS	(399.0 / 80.0) 5497046 (399.0 / 99.0) 1809522	(8.02, 1.00) (0.00, N/A, 0.2)	3843.8 4067.6	0.3292 97.9 97.9	9.3415 [9.1098]	102.5%			
PFHpS	(449.0 / 80.0) 4655282 (449.0 / 99.0) 1364079	(8.79, 0.93) (N/A, -0.03, 0.1)	660.3 545.6	0.2930 107.1 107.1	10.1795 [9.5141]	107.0%			
PFOS	(499.0 / 80.0) 5408135 (499.0 / 99.0) 1245798	(9.45, 1.00) (0.00, N/A, -0.1)	107.2 128.5	0.2304 94.7 94.7	9.5064 [9.2749]	102.5%			
PFNS	(549.0 / 80.0) 6857872 (549.0 / 99.0) 1607367	(9.76, 1.03) (N/A, -0.01, 0.1)	779.5 870.0	0.2344 96.0 96.0	10.8669 [9.5989]	113.2%			
PFDS	(599.0 / 80.0) 7907397 (599.0 / 99.0) 1810025	(9.91, 1.05) (N/A, -0.01, 0.2)	1173.5 1014.3	0.2289 101.7 101.7	11.2866 [9.6311]	117.2%			
PFDoS	(698.9 / 80.0) 2945783 (698.9 / 99.0) 628808	(10.11, 1.07) (N/A, -0.01, 0.1)	1059.1 1043.2	0.2135 87.2 87.2	10.0602 [9.6956]	103.8%			
4:2FTS	(327.0 / 307.0) 7219424 (327.0 / 81.0) 3962590	(5.83, 1.00) (0.00, N/A, 0.3)	742.8 891.9	0.5489 111.1 111.1	35.0389 [37.3811]	93.7%			
6:2FTS	(427.0 / 407.0) 4387404 (427.0 / 81.0) 2952550	(7.56, 1.00) (0.00, N/A, -0.1)	852.0 1014.4	0.6730 86.5 86.5	42.2664 [37.9617]	111.3%			
8:2FTS	(527.0 / 507.0) 4299071 (527.0 / 81.0) 2483349	(8.97, 1.00) (0.00, N/A, 0.1)	581.6 491.2	0.5776 102.1 102.1	39.3656 [38.3315]	102.7%			

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
PFOSA	(498.0 / 78.0) 7323816 (498.0 / 478.0) 156082	(10.17, 1.00) (0.00, N/A, -0.1)	1220.2 517.0	0.0213 102.2 102.2	11.2339 [10.0000]	112.3%			
NMeFOSA	(511.9 / 219.0) 5018962 (511.9 / 169.0) 3409088	(10.60, 1.00) (0.00, N/A, -0.1)	1068.1 1194.8	0.6792 94.3 94.3	41.0228 [40.0000]	102.6%			
NEIFOSA	(526.0 / 219.0) 5202781 (526.0 / 169.0) 5559747	(10.69, 1.00) (0.00, N/A, 0.0)	1128.4 1454.6	1.0686 101.0 101.0	41.3031 [40.0000]	103.3%			
NMeFOSAA	(570.0 / 419.0) 1047253 (570.0 / 483.0) 528303	(9.50, 1.00) (0.01, N/A, 0.0)	505.4 486.7	0.5045 82.1 82.1	9.6770 [10.0000]	96.8%			
NEIFOSAA	(584.0 / 419.0) 1028405 (584.0 / 526.0) 603316	(9.68, 1.00) (0.01, N/A, 0.0)	933.5 1079.0	0.5867 80.0 80.0	8.7467 [10.0000]	87.5%			
NMeFOSE	(616.1 / 59.0) 1066666	(10.57, 1.00) (0.01, N/A, 0.0)	1245.3	N/A 0.0 0.0	43.1436 [40.0000]	107.9%			
NEtFOSE	(630.0 / 59.0) 190429	(10.67, 1.00) (0.01, N/A, 0.0)	952.6	N/A 0.0 0.0	39.7759 [40.0000]	99.4%			
HFPO-DA	(285.0 / 169.0) 1706844 (285.0 / 185.0) 4940740	(6.50, 1.00) (0.00, N/A, 0.0)	940.9 950.3	2.8947 105.5 105.5	19.4163 [20.0000]	97.1%			
ADONA	(377.0 / 85.0) 7625070 (377.0 / 251.0) 966765	(7.40, 1.14) (N/A, -0.03, 0.0)	848.9 734.0	0.1268 101.8 101.8	19.5285 [18.8540]	103.6%			
9CI-Pf3ONS	(531.0 / 351.0) 18752532 (533.0 / 353.0) 6070274	(9.71, 1.49) (N/A, -0.02, 0.0)	653.0 661.6	0.3237 109.4 109.4	18.3510 [18.6651]	98.3%			
11CI-PF3OUDS	(631.0 / 451.0) 10830263 (633.0 / 453.0) 3030278	(10.00, 1.54) (N/A, -0.01, 0.1)	1577.4 1022.7	0.2798 84.6 84.6	19.8453 [18.8642]	105.2%			

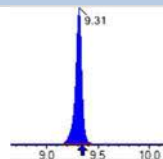
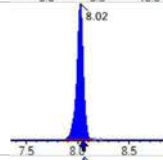
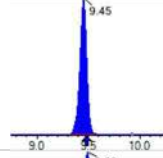
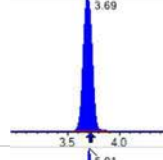
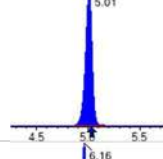
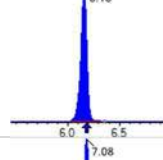
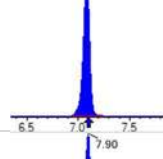
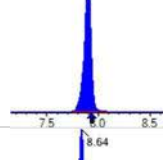
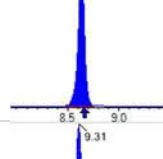
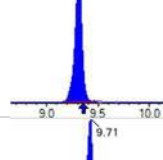
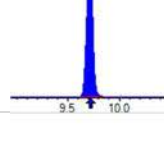


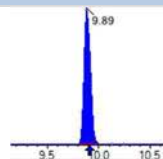
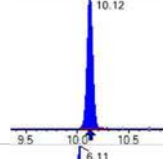
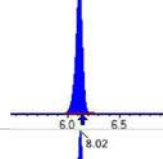
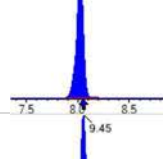
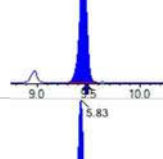
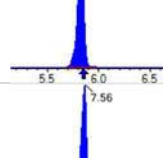
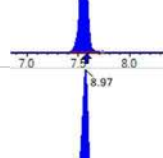
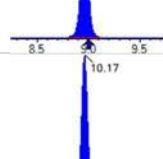
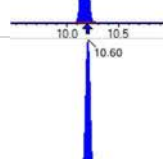
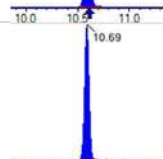

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

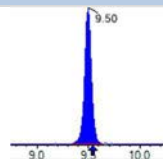
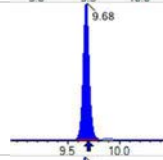
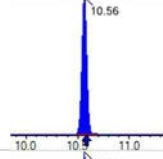
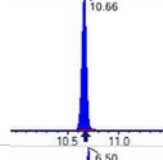
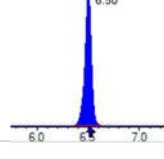
Sample I.D.: SB03941-CAL6
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 Acquisition Method: 1633 2022-12-21.dam

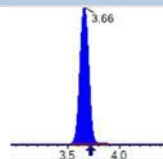
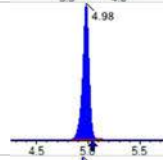
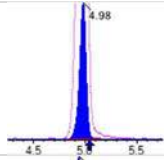
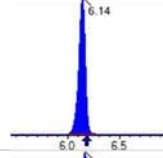
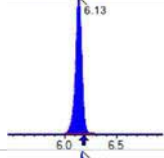
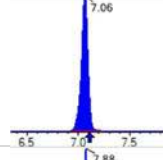
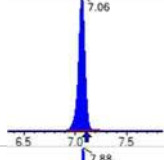
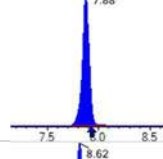
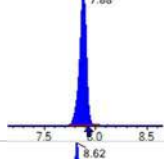
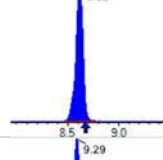
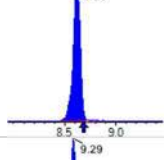
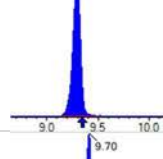
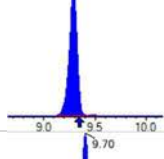
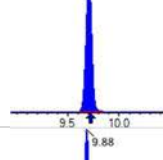
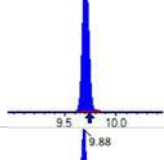
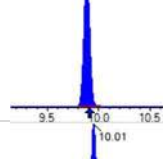
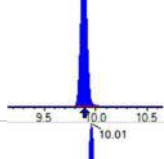
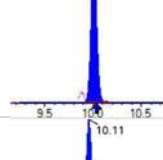
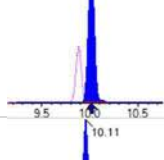
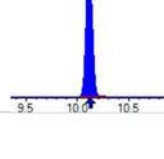
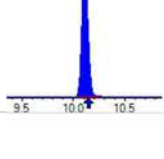
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 Path: S2022-12-21A (6)
 Acquired: 2022/12/21 - 15:30

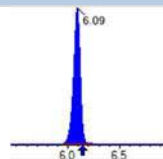
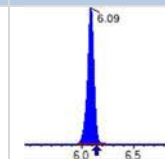
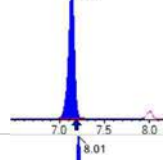
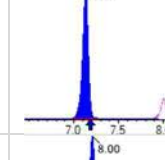
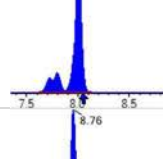
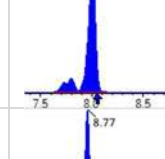
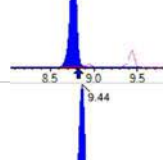
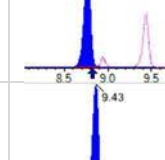
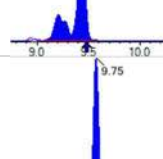
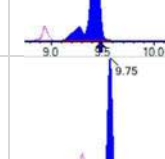
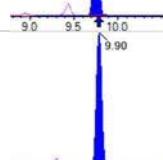
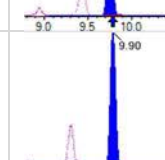
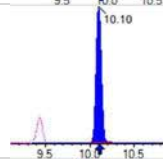
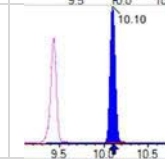
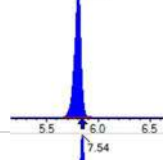
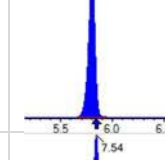
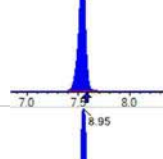
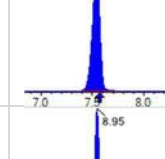
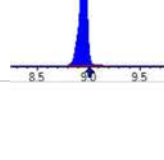
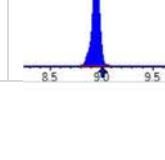
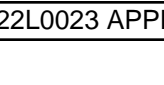
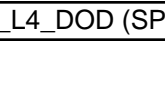
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 204327 (241.0 / 117.0) 336062	(4.49, 0.90) (N/A, -0.03, 0.1)	792.9 648.3	1.6447 98.3 98.3	41.6496 [40.0000]	104.1%			
5:3FTCA	(341.0 / 236.7) 1619148 (341.0 / 217.0) 2611063	(6.79, 1.10) (N/A, -0.03, -0.1)	703.3 612.1	1.6126 110.2 110.2	37.9872 [40.0000]	95.0%			
7:3FTCA	(441.0 / 317.0) 1906765 (441.0 / 337.0) 1608500	(8.60, 1.40) (N/A, -0.03, -0.1)	523.3 597.0	0.8436 100.7 100.7	38.8788 [40.0000]	97.2%			
PFEESA	(315.0 / 135.0) 4593030 (315.0 / 83.0) 1327802	(6.61, 1.07) (N/A, -0.03, -0.1)	844.1 795.4	0.2891 94.2 94.2	17.3915 [17.8492]	97.4%			
PFMPA	(229.0 / 85.0) 810629	(4.20, 0.84) (N/A, -0.03, 0.0)	1061.6	N/A 0.0 0.0	20.7783 [20.0000]	103.9%			
PFMBA	(279.0 / 85.0) 2665168	(5.40, 1.08) (N/A, -0.03, 0.0)	868.7	N/A 0.0 0.0	19.7641 [20.0000]	98.8%			
NFDHA	(295.0 / 201.0) 2388001 (295.0 / 85.0) 2094961	(6.04, 0.98) (N/A, -0.03, 0.0)	636.9 870.9	0.8773 99.4 99.4	19.6329 [20.0000]	98.2%			
13C3_PFBA_IIS	(216.0 / 172.0) 145548	(3.70, N/A) (N/A, -0.02, N/A)	760.7	N/A	1.0457 [1.0000]	104.6% { 95.9% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 251161	(6.16, N/A) (N/A, -0.03, N/A)	573.8	N/A	1.0877 [1.0000]	108.8% { 107.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 228422	(7.90, N/A) (N/A, -0.03, N/A)	604.8	N/A	1.0390 [1.0000]	103.9% { 96.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 199253	(8.63, N/A) (N/A, -0.03, N/A)	633.0	N/A	1.0760 [1.0000]	107.6% { 98.5% }			

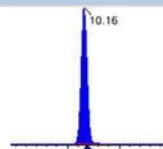
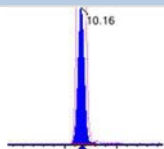
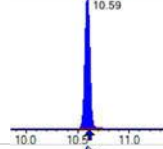
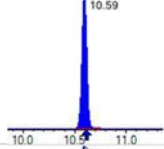
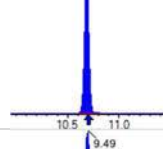
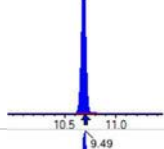
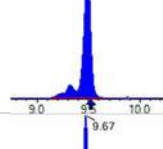
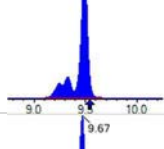
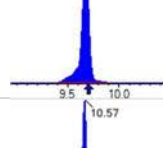
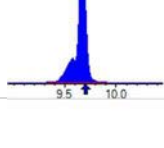
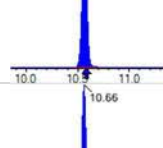
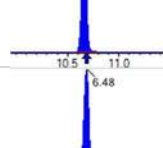
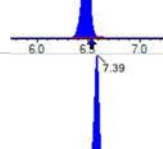
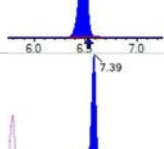
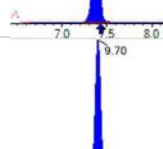
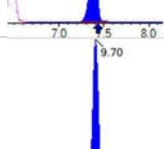
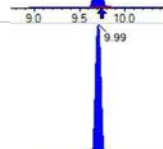
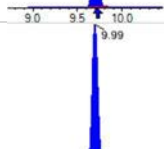

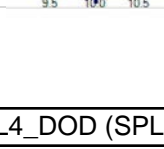
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 224539	(9.31, N/A) (N/A, -0.03, N/A)	595.4	N/A	1.2150 [1.0000]	121.5% { 129.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 425062	(8.02, N/A) (N/A, -0.03, N/A)	758.0	N/A	1.0529 [1.0000]	105.3% { 100.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 327789	(9.45, N/A) (N/A, -0.03, N/A)	437.5	N/A	1.0270 [1.0000]	102.7% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1163869	(3.69, N/A) (N/A, -0.02, N/A)	943.4	N/A	7.7695 [8.0000]	97.1% { 97.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 647411	(5.01, N/A) (N/A, -0.03, N/A)	744.3	N/A	3.7047 [4.0000]	92.6% { 93.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 561752	(6.16, N/A) (N/A, -0.03, N/A)	573.9	N/A	1.9436 [2.0000]	97.2% { 104.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 476643	(7.08, N/A) (N/A, -0.03, N/A)	661.3	N/A	1.8904 [2.0000]	94.5% { 97.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 497619	(7.90, N/A) (N/A, -0.03, N/A)	689.7	N/A	1.9865 [2.0000]	99.3% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 223778	(8.64, N/A) (N/A, -0.03, N/A)	409.0	N/A	1.0213 [1.0000]	102.1% { 102.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 273272	(9.31, N/A) (N/A, -0.03, N/A)	311.9	N/A	0.8557 [1.0000]	85.6% { 97.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 337405	(9.71, N/A) (N/A, -0.01, N/A)	389.2	N/A	0.7428 [1.0000]	74.3% { 84.7% }			

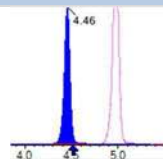
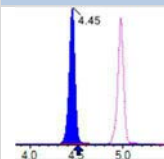
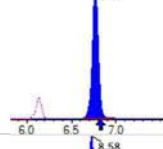
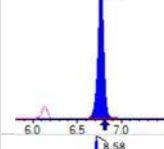
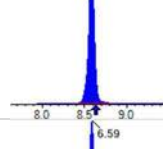
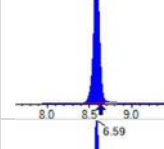
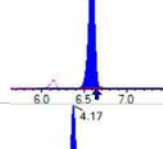
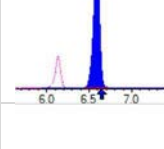
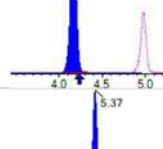
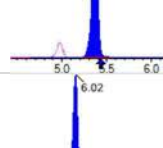
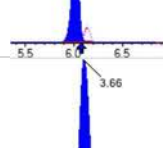
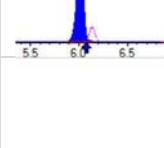
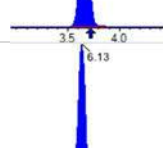
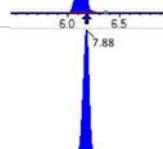
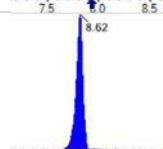
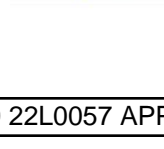
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 346746	(9.89, N/A) (N/A, -0.02, N/A)	642.1	N/A	0.7648 [1.0000]	76.5% { 89.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 222076	(10.12, N/A) (N/A, -0.01, N/A)	456.1	N/A	0.7376 [1.0000]	73.8% { 91.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1363704	(6.11, N/A) (N/A, -0.03, N/A)	654.6	N/A	1.8975 [2.0000]	94.9% { 99.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 757540	(8.02, N/A) (N/A, -0.03, N/A)	799.7	N/A	1.9811 [2.0000]	99.1% { 100.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1048231	(9.45, N/A) (N/A, -0.03, N/A)	180.4	N/A	1.8633 [2.0000]	93.2% { 88.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 249254	(5.83, N/A) (N/A, -0.03, N/A)	640.7	N/A	4.0948 [4.0000]	102.4% { 111.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 270052	(7.56, N/A) (N/A, -0.03, N/A)	709.3	N/A	3.6849 [4.0000]	92.1% { 98.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 275725	(8.97, N/A) (N/A, -0.03, N/A)	445.9	N/A	3.7584 [4.0000]	94.0% { 93.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1379635	(10.17, N/A) (N/A, -0.01, N/A)	959.9	N/A	1.9401 [2.0000]	97.0% { 94.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 300177	(10.60, N/A) (N/A, -0.01, N/A)	888.1	N/A	1.9334 [2.0000]	96.7% { 91.0% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 279297	(10.69, N/A) (N/A, -0.01, N/A)	926.2	N/A	1.9487 [2.0000]	97.4% { 98.1% }			

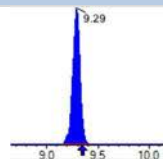
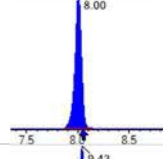
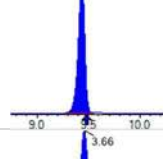
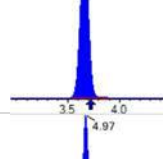
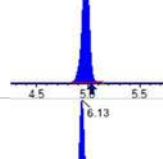
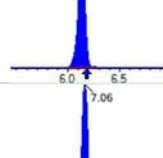
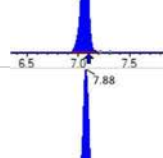
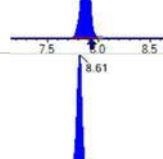
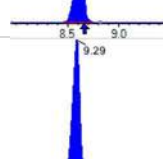
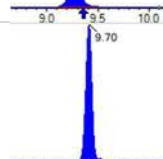

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 555492	(9.50, N/A) (N/A, -0.03, N/A)	414.0	N/A	4.1525 [4.0000]	103.8% { 108.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 523855	(9.68, N/A) (N/A, -0.02, N/A)	484.6	N/A	4.4428 [4.0000]	111.1% { 111.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 391753	(10.56, N/A) (N/A, -0.01, N/A)	1314.7	N/A	17.9697 [20.0000]	89.8% { 90.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 187004	(10.66, N/A) (N/A, -0.01, N/A)	901.5	N/A	18.8420 [20.0000]	94.2% { 102.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1157042	(6.50, N/A) (N/A, -0.03, N/A)	770.4	N/A	7.5294 [8.0000]	94.1% { 98.5% }			

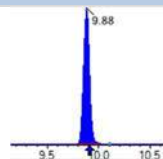
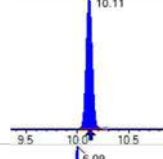
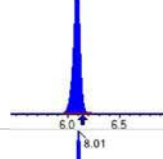
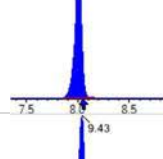
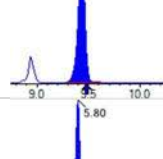
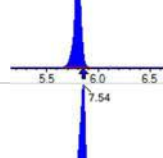
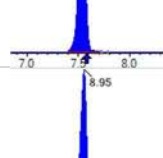
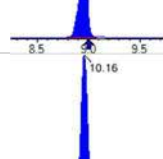
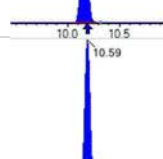
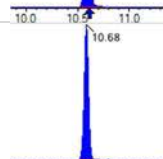

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 7729586	(3.66, 1.00) (0.00, N/A, 0.0)	67.9	N/A 0.0 0.0	81.7379 [80.0000]	102.2%			
PFPeA	(262.9 / 219.0) 5643399 (262.9 / 69.0) 60722	(4.98, 1.00) (0.00, N/A, 0.0)	694.2 520.3	0.0108 96.1 96.1	40.6136 [40.0000]	101.5%			
PFHxA	(313.0 / 269.0) 4661260 (313.0 / 119.0) 458438	(6.14, 1.00) (0.00, N/A, 0.3)	740.9 630.9	0.0984 100.6 100.6	21.3969 [20.0000]	107.0%			
PFHpA	(363.0 / 319.0) 4440128 (363.0 / 169.0) 1284143	(7.06, 1.00) (0.00, N/A, 0.0)	668.8 659.4	0.2892 92.9 92.9	21.0935 [20.0000]	105.5%			
PFOA	(413.0 / 369.0) 4641747 (413.0 / 169.0) 1487003	(7.88, 1.00) (0.00, N/A, -0.3)	945.5 720.9	0.3204 98.0 98.0	20.0481 [20.0000]	100.2%			
PFNA	(463.0 / 419.0) 3537219 (463.0 / 169.0) 723244	(8.62, 1.00) (0.00, N/A, -0.2)	600.2 105.2	0.2045 106.1 106.1	20.0197 [20.0000]	100.1%			
PFDA	(513.0 / 469.0) 4550414 (513.0 / 169.0) 407049	(9.29, 1.00) (0.00, N/A, 0.3)	458.4 340.9	0.0895 93.6 93.6	18.7496 [20.0000]	93.7%			
PFUnA	(563.0 / 519.0) 5474685 (563.0 / 169.0) 489769	(9.70, 1.00) (0.00, N/A, 0.3)	796.9 670.2	0.0895 103.0 103.0	20.8759 [20.0000]	104.4%			
PFDoA	(613.0 / 569.0) 6253442 (613.0 / 169.0) 780811	(9.88, 1.00) (0.00, N/A, 0.0)	838.3 526.7	0.1249 89.7 89.7	19.2908 [20.0000]	96.5%			
PFTrDA	(663.0 / 619.0) 5585067 (663.0 / 169.0) 1021977	(10.01, 1.01) (N/A, -0.02, -0.4)	939.9 794.3	0.1830 89.4 89.4	19.8858 [20.0000]	99.4%			
PFTeDA	(713.0 / 669.0) 4569846 (713.0 / 169.0) 904045	(10.11, 1.00) (0.00, N/A, 0.2)	734.0 687.4	0.1978 97.3 97.3	17.5178 [20.0000]	87.6%			

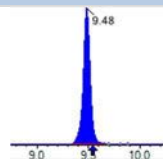
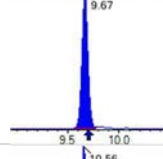
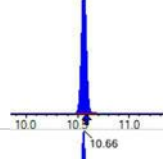
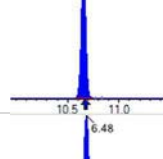
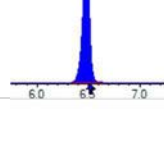
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 6221305 (298.9 / 99.0) 4130206	(6.09, 1.00) (0.00, N/A, 0.1)	735.2 716.1	0.6639 107.9 107.9	17.4196 [17.6947]	98.4%			
PFPeS	(349.0 / 80.0) 12435170 (349.0 / 99.0) 4513587	(7.13, 0.89) (N/A, -0.05, 0.0)	731.5 788.8	0.3630 102.0 102.0	19.6427 [18.7676]	104.7%			
PFHxS	(399.0 / 80.0) 10414987 (399.0 / 99.0) 3525485	(8.01, 1.00) (0.00, N/A, 0.2)	3224.1 4892.8	0.3385 100.7 100.7	18.9174 [18.2197]	103.8%			
PFHpS	(449.0 / 80.0) 9724229 (449.0 / 99.0) 2826299	(8.76, 0.93) (N/A, -0.05, -0.1)	693.4 620.9	0.2906 106.2 106.2	19.4303 [19.0281]	102.1%			
PFOS	(499.0 / 80.0) 11033465 (499.0 / 99.0) 2411819	(9.44, 1.00) (0.00, N/A, 0.2)	102.1 160.8	0.2186 89.9 89.9	17.7225 [18.5499]	95.5%			
PFNS	(549.0 / 80.0) 12066925 (549.0 / 99.0) 3200250	(9.75, 1.03) (N/A, -0.02, 0.0)	748.7 678.2	0.2652 108.7 108.7	17.4726 [19.1977]	91.0%			
PFDS	(599.0 / 80.0) 13381834 (599.0 / 99.0) 3299330	(9.90, 1.05) (N/A, -0.02, 0.1)	1052.2 1451.8	0.2466 109.5 109.5	17.4537 [19.2621]	90.6%			
PFDoS	(698.9 / 80.0) 5470070 (698.9 / 99.0) 1315874	(10.10, 1.07) (N/A, -0.02, 0.0)	1218.8 960.3	0.2406 98.3 98.3	17.0703 [19.3913]	88.0%			
4:2FTS	(327.0 / 307.0) 13496630 (327.0 / 81.0) 7417812	(5.80, 1.00) (0.00, N/A, 0.1)	849.9 833.0	0.5496 111.3 111.3	72.4566 [74.7622]	96.9%			
6:2FTS	(427.0 / 407.0) 8307126 (427.0 / 81.0) 5171329	(7.54, 1.00) (0.00, N/A, 0.0)	820.9 695.6	0.6225 80.0 80.0	76.1349 [75.9234]	100.3%			
8:2FTS	(527.0 / 507.0) 8258969 (527.0 / 81.0) 4745404	(8.95, 1.00) (0.00, N/A, 0.3)	609.9 658.7	0.5746 101.5 101.5	75.3496 [76.6631]	98.3%			

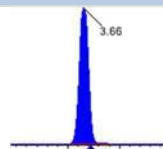
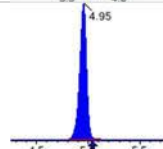
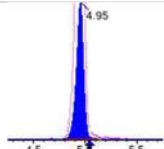
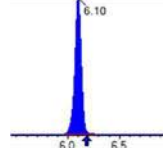
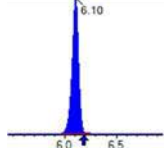
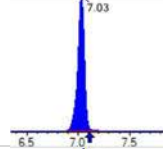
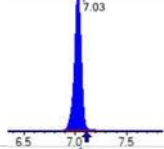
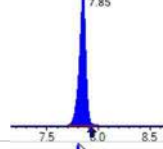
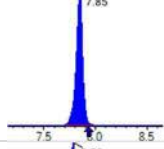
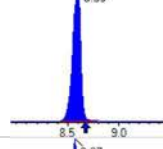
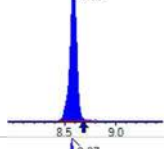
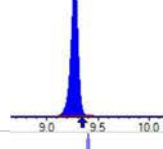
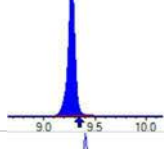
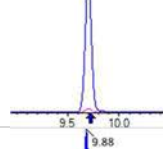
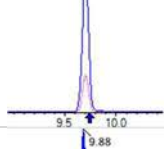
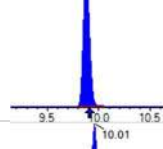
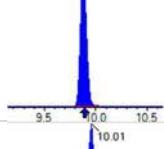
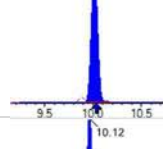
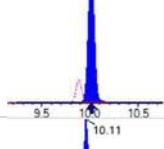
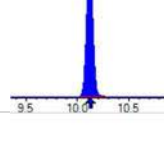
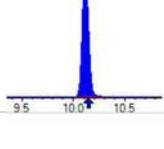
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 12934205 (498.0 / 478.0) 273418	(10.16, 1.00) (0.00, N/A, 0.0)	1019.0 675.2	0.0211 101.4 101.4	18.9126 [20.0000]	94.6%			
NMeFOSA	(511.9 / 219.0) 10047403 (511.9 / 169.0) 6239729	(10.59, 1.00) (0.00, N/A, 0.0)	963.4 963.6	0.6210 86.2 86.2	79.4328 [80.0000]	99.3%			
NEIFOSA	(526.0 / 219.0) 10330116 (526.0 / 169.0) 10487941	(10.69, 1.00) (0.00, N/A, 0.0)	1549.4 1526.7	1.0153 96.0 96.0	82.6028 [80.0000]	103.3%			
NMeFOSAA	(570.0 / 419.0) 2160138 (570.0 / 483.0) 1120189	(9.49, 1.00) (0.01, N/A, 0.0)	519.4 506.9	0.5186 84.4 84.4	21.0347 [20.0000]	105.2%			
NEIFOSAA	(584.0 / 419.0) 1755294 (584.0 / 526.0) 1179499	(9.67, 1.00) (0.01, N/A, 0.2)	1046.0 2541.1	0.6720 91.6 91.6	19.8369 [20.0000]	99.2%			
NMeFOSE	(616.1 / 59.0) 2100981	(10.57, 1.00) (0.01, N/A, 0.0)	1163.7	N/A 0.0 0.0	87.8464 [80.0000]	109.8%			
NEtFOSE	(630.0 / 59.0) 379057	(10.66, 1.00) (0.01, N/A, 0.0)	1328.5	N/A 0.0 0.0	79.1545 [80.0000]	98.9%			
HFPO-DA	(285.0 / 169.0) 3403206 (285.0 / 185.0) 9550202	(6.48, 1.00) (0.00, N/A, 0.0)	822.2 932.2	2.8062 102.2 102.2	39.8571 [40.0000]	99.6%			
ADONA	(377.0 / 85.0) 14175645 (377.0 / 251.0) 1888186	(7.39, 1.14) (N/A, -0.04, -0.1)	782.5 715.9	0.1332 107.0 107.0	37.3778 [37.7080]	99.1%			
9CI-Pf3ONS	(531.0 / 351.0) 33927453 (533.0 / 353.0) 11818760	(9.70, 1.50) (N/A, -0.03, 0.1)	767.5 701.4	0.3484 117.7 117.7	37.0127 [37.3302]	99.1%			
11CI-PF3OUDS	(631.0 / 451.0) 18459375 (633.0 / 453.0) 6096113	(9.99, 1.54) (N/A, -0.02, 0.1)	875.1 1257.4	0.3302 99.8 99.8	34.8243 [37.7283]	92.3%			

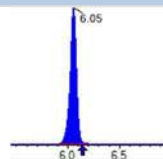
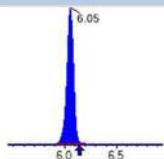
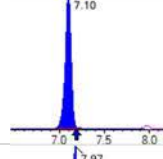
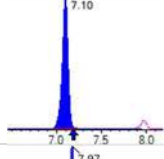
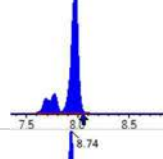
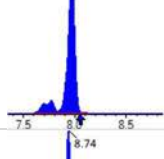
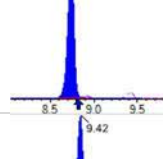
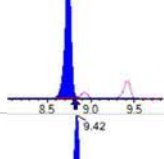
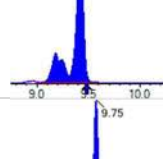
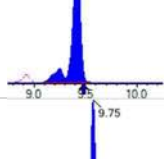
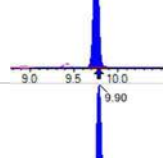
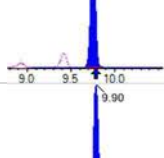
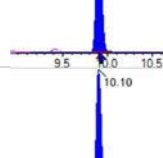
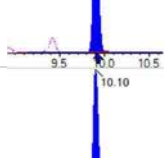
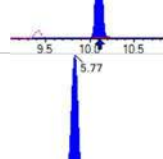
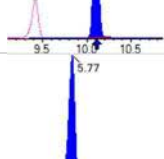
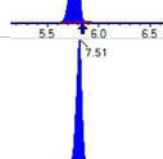
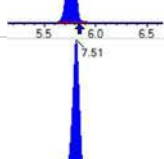
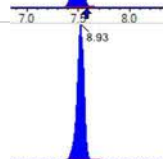
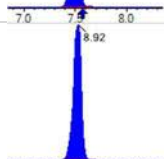
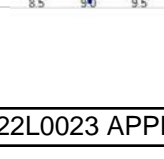
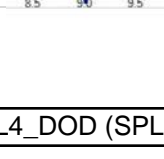
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 413530 (241.0 / 117.0) 684831	(4.46, 0.90) (N/A, -0.06, 0.0)	763.7 842.4	1.6561 99.0 99.0	86.2307 [80.0000]	107.8%			
5:3FTCA	(341.0 / 236.7) 3356741 (341.0 / 217.0) 5218130	(6.77, 1.10) (N/A, -0.05, -0.2)	736.7 741.6	1.5545 106.2 106.2	87.2034 [80.0000]	109.0%			
7:3FTCA	(441.0 / 317.0) 3849941 (441.0 / 337.0) 3225448	(8.58, 1.40) (N/A, -0.05, 0.0)	479.5 551.2	0.8378 100.0 100.0	86.9230 [80.0000]	108.7%			
PFEESA	(315.0 / 135.0) 8973610 (315.0 / 83.0) 2426863	(6.59, 1.07) (N/A, -0.05, 0.2)	892.6 762.9	0.2704 88.1 88.1	37.6244 [35.6984]	105.4%			
PFMPA	(229.0 / 85.0) 1587857	(4.17, 0.84) (N/A, -0.06, 0.0)	1007.1	N/A 0.0 0.0	41.6361 [40.0000]	104.1%			
PFMBA	(279.0 / 85.0) 5452093	(5.37, 1.08) (N/A, -0.06, 0.0)	936.0	N/A 0.0 0.0	41.3605 [40.0000]	103.4%			
NFDHA	(295.0 / 201.0) 4564595 (295.0 / 85.0) 4173432	(6.02, 0.98) (N/A, -0.05, -0.1)	742.5 3610.4	0.9143 103.6 103.6	41.5544 [40.0000]	103.9%			
13C3_PFBA_IIS	(216.0 / 172.0) 143451	(3.66, N/A) (N/A, -0.06, N/A)	719.9	N/A	1.0306 [1.0000]	103.1% { 94.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 248043	(6.13, N/A) (N/A, -0.05, N/A)	661.9	N/A	1.0742 [1.0000]	107.4% { 106.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 234938	(7.88, N/A) (N/A, -0.05, N/A)	713.0	N/A	1.0686 [1.0000]	106.9% { 98.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 193387	(8.62, N/A) (N/A, -0.05, N/A)	335.2	N/A	1.0443 [1.0000]	104.4% { 95.6% }			

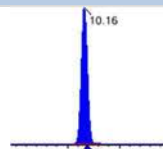
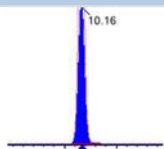
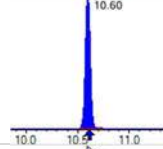
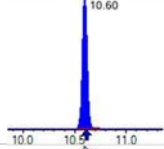
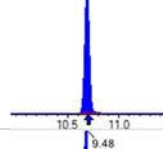
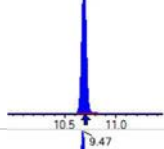
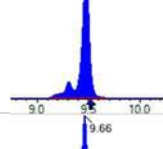
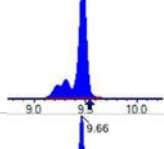
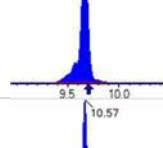
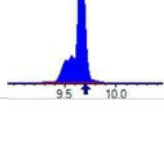
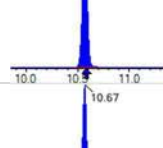
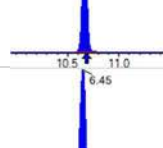
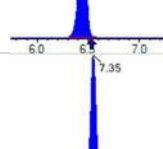
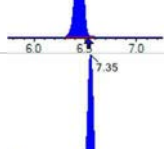
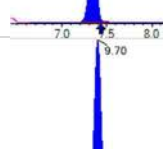
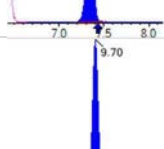
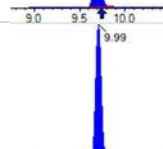
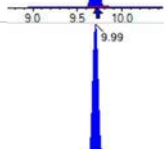

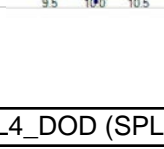
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 186408	(9.29, N/A) (N/A, -0.05, N/A)	664.1	N/A	1.0087 [1.0000]	100.9% { 107.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 428893	(8.00, N/A) (N/A, -0.05, N/A)	824.8	N/A	1.0624 [1.0000]	106.2% { 101.5% }			
13C4_PFOS_IIS	(502.8 / 79.9) 333901	(9.43, N/A) (N/A, -0.05, N/A)	344.0	N/A	1.0461 [1.0000]	104.6% { 101.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1159624	(3.66, N/A) (N/A, -0.06, N/A)	908.2	N/A	7.8543 [8.0000]	98.2% { 97.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 632863	(4.97, N/A) (N/A, -0.06, N/A)	720.4	N/A	3.6669 [4.0000]	91.7% { 90.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 507317	(6.13, N/A) (N/A, -0.05, N/A)	683.8	N/A	1.7773 [2.0000]	88.9% { 94.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 461855	(7.06, N/A) (N/A, -0.04, N/A)	556.4	N/A	1.8548 [2.0000]	92.7% { 94.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 470888	(7.88, N/A) (N/A, -0.05, N/A)	672.4	N/A	1.8276 [2.0000]	91.4% { 94.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 205912	(8.61, N/A) (N/A, -0.05, N/A)	479.7	N/A	0.9683 [1.0000]	96.8% { 94.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 254972	(9.29, N/A) (N/A, -0.06, N/A)	408.6	N/A	0.9617 [1.0000]	96.2% { 90.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 331844	(9.70, N/A) (N/A, -0.02, N/A)	703.9	N/A	0.8800 [1.0000]	88.0% { 83.3% }			

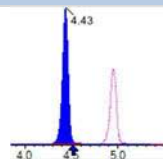
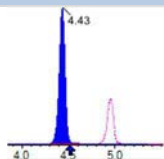
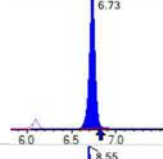
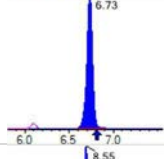
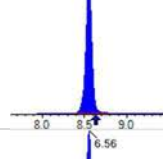
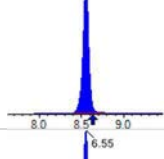
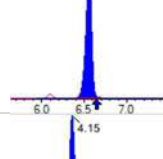
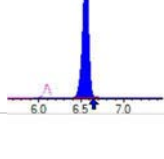
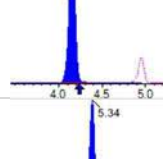
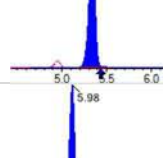
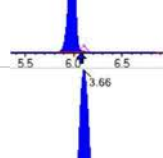
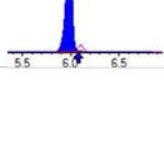
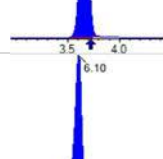
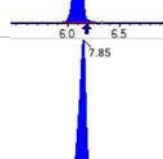
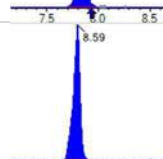

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 376028	(9.88, N/A) (N/A, -0.02, N/A)	523.5	N/A	0.9990 [1.0000]	99.9% { 97.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 294342	(10.11, N/A) (N/A, -0.02, N/A)	600.7	N/A	1.1775 [1.0000]	117.8% { 121.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1302850	(6.09, N/A) (N/A, -0.05, N/A)	735.8	N/A	1.7967 [2.0000]	89.8% { 94.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 708742	(8.01, N/A) (N/A, -0.05, N/A)	751.5	N/A	1.8369 [2.0000]	91.8% { 94.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1147133	(9.43, N/A) (N/A, -0.05, N/A)	153.7	N/A	2.0018 [2.0000]	100.1% { 96.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 225340	(5.80, N/A) (N/A, -0.05, N/A)	720.4	N/A	3.6689 [4.0000]	91.7% { 100.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 283858	(7.54, N/A) (N/A, -0.04, N/A)	652.9	N/A	3.8387 [4.0000]	96.0% { 103.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 276735	(8.95, N/A) (N/A, -0.05, N/A)	514.2	N/A	3.7385 [4.0000]	93.5% { 93.5% }			
13C8_PFOA_EIS	(506.0 / 78.0) 1447254	(10.16, N/A) (N/A, -0.02, N/A)	722.4	N/A	1.9979 [2.0000]	99.9% { 98.8% }			
D3_NMeFOA_EIS	(515.0 / 169.0) 310344	(10.59, N/A) (N/A, -0.01, N/A)	1001.9	N/A	1.9623 [2.0000]	98.1% { 94.0% }			
D5_NEtFOA_EIS	(531.1 / 169.0) 277284	(10.68, N/A) (N/A, -0.01, N/A)	799.4	N/A	1.8992 [2.0000]	95.0% { 97.4% }			

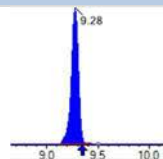
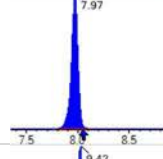
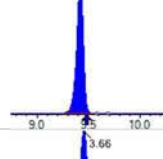
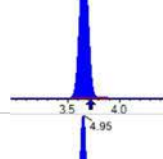
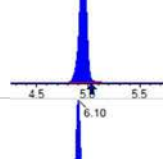
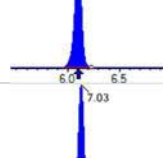
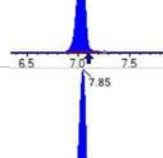
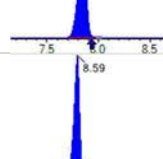
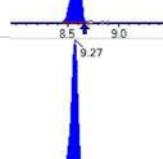
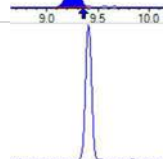
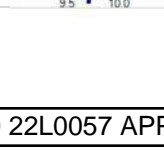
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 527124	(9.48, N/A) (N/A, -0.05, N/A)	391.6	N/A	3.8683 [4.0000]	96.7% { 103.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 394245	(9.67, N/A) (N/A, -0.03, N/A)	343.6	N/A	3.2824 [4.0000]	82.1% { 83.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 378964	(10.56, N/A) (N/A, -0.02, N/A)	878.6	N/A	17.0648 [20.0000]	85.3% { 87.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 187054	(10.66, N/A) (N/A, -0.02, N/A)	1005.6	N/A	18.5020 [20.0000]	92.5% { 102.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1123837	(6.48, N/A) (N/A, -0.05, N/A)	699.6	N/A	7.4053 [8.0000]	92.6% { 95.7% }			

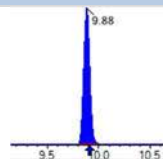
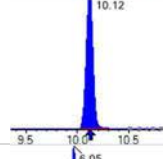
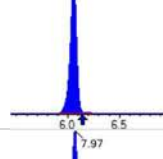
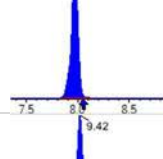
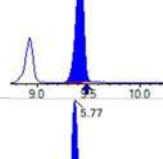
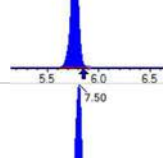
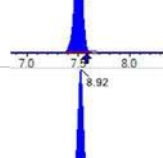
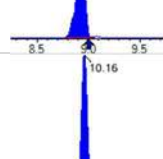
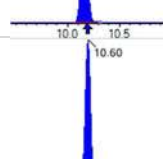
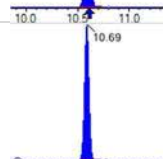

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 15778457	(3.66, 1.00) (0.00, N/A, 0.0)	61.8	N/A 0.0 0.0	201.2526 [200.0000]	100.6%			
PFPeA	(262.9 / 219.0) 12133479 (262.9 / 69.0) 132475	(4.95, 1.00) (0.00, N/A, 0.1)	828.8 567.2	0.0109 97.5 97.5	97.3969 [100.0000]	97.4%			
PFHxA	(313.0 / 269.0) 10205443 (313.0 / 119.0) 948352	(6.10, 1.00) (0.00, N/A, -0.2)	779.4 798.1	0.0929 95.0 95.0	48.9028 [50.0000]	97.8%			
PFHpA	(363.0 / 319.0) 9310576 (363.0 / 169.0) 2680356	(7.03, 1.00) (0.00, N/A, 0.2)	724.8 594.8	0.2879 92.4 92.4	47.8422 [50.0000]	95.7%			
PFOA	(413.0 / 369.0) 10880930 (413.0 / 169.0) 3245631	(7.85, 1.00) (0.00, N/A, 0.1)	767.4 928.5	0.2983 91.3 91.3	47.1047 [50.0000]	94.2%			
PFNA	(463.0 / 419.0) 7522680 (463.0 / 169.0) 1650478	(8.59, 1.00) (0.00, N/A, 0.3)	453.6 145.2	0.2194 113.8 113.8	44.6746 [50.0000]	89.3%			
PFDA	(513.0 / 469.0) 10901269 (513.0 / 169.0) 1054782	(9.27, 1.00) (0.00, N/A, 0.0)	475.9 419.2	0.0968 101.2 101.2	47.0411 [50.0000]	94.1%			
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 [50.0000]	N/A%			QC,
PFDoA	(613.0 / 569.0) 13234710 (613.0 / 169.0) 1677806	(9.88, 1.00) (0.00, N/A, 0.0)	801.8 797.3	0.1268 91.1 91.1	43.9737 [50.0000]	87.9%			
PFTrDA	(663.0 / 619.0) 10582859 (663.0 / 169.0) 2206188	(10.01, 1.01) (N/A, -0.01, 0.1)	667.9 1097.1	0.2085 101.9 101.9	40.5849 [50.0000]	81.2%			
PFTeDA	(713.0 / 669.0) 7805760 (713.0 / 169.0) 1615620	(10.12, 1.00) (0.00, N/A, 0.2)	709.6 922.1	0.2070 101.8 101.8	43.8879 [50.0000]	87.8%			

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
PFBS	(298.9 / 80.0) 14320384 (298.9 / 99.0) 9157257	(6.05, 1.00) (0.00, N/A, 0.0)	609.6 755.2	0.6395 103.9 103.9	41.9991 [44.2367]	94.9%			
PFPeS	(349.0 / 80.0) 27380308 (349.0 / 99.0) 10684632	(7.10, 0.89) (N/A, -0.08, 0.0)	716.4 803.4	0.3902 109.6 109.6	43.5556 [46.9191]	92.8%			
PFHxS	(399.0 / 80.0) 23822711 (399.0 / 99.0) 8501412	(7.97, 1.00) (0.00, N/A, 0.2)	3206.8 4858.3	0.3569 106.2 106.2	43.5764 [45.5491]	95.7%			
PFHpS	(449.0 / 80.0) 21526516 (449.0 / 99.0) 6225213	(8.74, 0.93) (N/A, -0.08, -0.2)	807.9 582.9	0.2892 105.7 105.7	53.6267 [47.5703]	112.7%			
PFOS	(499.0 / 80.0) 23361916 (499.0 / 99.0) 5350161	(9.42, 1.00) (0.00, N/A, 0.2)	90.6 158.6	0.2290 94.2 94.2	46.7847 [46.3746]	100.9%			
PFNS	(549.0 / 80.0) 25746195 (549.0 / 99.0) 6429920	(9.75, 1.04) (N/A, -0.02, -0.1)	637.6 712.8	0.2497 102.3 102.3	46.4790 [47.9943]	96.8%			
PFDS	(599.0 / 80.0) 29991360 (599.0 / 99.0) 7324275	(9.90, 1.05) (N/A, -0.02, 0.0)	1114.1 872.9	0.2442 108.5 108.5	48.7700 [48.1553]	101.3%			
PFDoS	(698.9 / 80.0) 13570418 (698.9 / 99.0) 2668933	(10.10, 1.07) (N/A, -0.02, 0.0)	1153.0 1114.8	0.1967 80.4 80.4	52.7987 [48.4781]	108.9%			
4:2FTS	(327.0 / 307.0) 28030184 (327.0 / 81.0) 16838889	(5.77, 1.00) (0.00, N/A, -0.1)	791.1 776.4	0.6007 121.6 121.6	162.6637 [186.9055]	87.0%			
6:2FTS	(427.0 / 407.0) 17601598 (427.0 / 81.0) 12202144	(7.51, 1.00) (0.01, N/A, 0.1)	1049.9 926.0	0.6932 89.1 89.1	159.3520 [189.8085]	84.0%			
8:2FTS	(527.0 / 507.0) 17933024 (527.0 / 81.0) 10716573	(8.93, 1.00) (0.00, N/A, 0.1)	442.8 462.7	0.5976 105.6 105.6	159.3327 [191.6577]	83.1%			

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
PFOSA	(498.0 / 78.0) 26488352 (498.0 / 478.0) 712333	(10.16 , 1.00) (0.00 , N/A , 0.0)	898.9 465.3	0.0269 129.0 129.0	44.9093 [50.0000]	89.8%			
NMeFOSA	(511.9 / 219.0) 20550926 (511.9 / 169.0) 14258423	(10.60 , 1.00) (0.00 , N/A , 0.0)	1415.7 1392.1	0.6938 96.3 96.3	154.7837 [200.0000]	77.4%			
NEIFOSA	(526.0 / 219.0) 20990611 (526.0 / 169.0) 22220555	(10.69 , 1.00) (0.00 , N/A , 0.0)	1261.8 1236.0	1.0586 100.1 100.1	180.9576 [200.0000]	90.5%			
NMeFOSAA	(570.0 / 419.0) 4624057 (570.0 / 483.0) 2546681	(9.48 , 1.00) (0.00 , N/A , 0.1)	612.4 699.2	0.5507 89.6 89.6	52.0507 [50.0000]	104.1%			
NEIFOSAA	(584.0 / 419.0) 3449541 (584.0 / 526.0) 2257461	(9.66 , 1.00) (0.01 , N/A , 0.1)	2584.8 1657.6	0.6544 89.3 89.3	44.6984 [50.0000]	89.4%			
NMeFOSE	(616.1 / 59.0) 4659899	(10.57 , 1.00) (0.01 , N/A , 0.0)	1409.7	N/A 0.0 0.0	193.2279 [200.0000]	96.6%			
NEtFOSE	(630.0 / 59.0) 761135	(10.67 , 1.00) (0.01 , N/A , 0.0)	1449.6	N/A 0.0 0.0	176.5757 [200.0000]	88.3%			
HFPO-DA	(285.0 / 169.0) 7283624 (285.0 / 185.0) 21015218	(6.45 , 1.00) (0.00 , N/A , 0.0)	819.6 766.3	2.8853 105.1 105.1	92.2819 [100.0000]	92.3%			
ADONA	(377.0 / 85.0) 30997851 (377.0 / 251.0) 4228517	(7.35 , 1.14) (N/A , -0.08 , -0.1)	720.3 754.4	0.1364 109.5 109.5	88.4207 [94.2700]	93.8%			
9CI-Pf3ONS	(531.0 / 351.0) 59541631 (533.0 / 353.0) 22562888	(9.70 , 1.51) (N/A , -0.03 , 0.0)	623.2 593.5	0.3789 128.0 128.0	93.8486 [93.3254]	100.6%			
11CI-PF3OUDS	(631.0 / 451.0) 37565149 (633.0 / 453.0) 12408034	(9.99 , 1.55) (N/A , -0.02 , 0.0)	851.2 754.0	0.3303 99.8 99.8	76.6659 [94.3208]	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
3:3FTCA	(241.0 / 177.0) 940591 (241.0 / 117.0) 1590971	(4.43, 0.90) (N/A, -0.08, 0.1)	760.7 709.5	1.6915 101.1 101.1	218.7688 [200.0000]	109.4%			
5:3FTCA	(341.0 / 236.7) 7717092 (341.0 / 217.0) 13002088	(6.73, 1.10) (N/A, -0.09, 0.0)	773.6 732.5	1.6848 115.1 115.1	209.2781 [200.0000]	104.6%			
7:3FTCA	(441.0 / 317.0) 8714946 (441.0 / 337.0) 7497720	(8.55, 1.40) (N/A, -0.08, -0.1)	569.5 568.2	0.8603 102.7 102.7	205.3998 [200.0000]	102.7%			
PFEESA	(315.0 / 135.0) 18885479 (315.0 / 83.0) 5523428	(6.56, 1.07) (N/A, -0.08, 0.1)	779.0 865.9	0.2925 95.3 95.3	82.6581 [89.2459]	92.6%			
PFMPA	(229.0 / 85.0) 3283850	(4.15, 0.84) (N/A, -0.07, 0.0)	1205.9	N/A 0.0 0.0	96.0441 [100.0000]	96.0%			
PFMBA	(279.0 / 85.0) 11632442	(5.34, 1.08) (N/A, -0.09, 0.0)	841.8	N/A 0.0 0.0	98.4289 [100.0000]	98.4%			
NFDHA	(295.0 / 201.0) 10199642 (295.0 / 85.0) 9290082	(5.98, 0.98) (N/A, -0.09, 0.0)	742.8 3901.2	0.9108 103.2 103.2	96.9290 [100.0000]	96.9%			
13C3_PFBA_IIS	(216.0 / 172.0) 117318	(3.66, N/A) (N/A, -0.06, N/A)	626.3	N/A	0.8428 [1.0000]	84.3% {77.3%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 217089	(6.10, N/A) (N/A, -0.08, N/A)	517.0	N/A	0.9401 [1.0000]	94.0% {92.8%}			
13C4_PFOA_IIS	(417.0 / 372.0) 213627	(7.85, N/A) (N/A, -0.08, N/A)	585.4	N/A	0.9717 [1.0000]	97.2% {89.8%}			
13C5_PFNA_IIS	(468.0 / 423.0) 176727	(8.59, N/A) (N/A, -0.07, N/A)	679.2	N/A	0.9543 [1.0000]	95.4% {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) 182763	(9.28, N/A) (N/A, -0.07, N/A)	341.1	N/A	0.9889 [1.0000]	98.9% { 105.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 402575	(7.97, N/A) (N/A, -0.08, N/A)	727.1	N/A	0.9972 [1.0000]	99.7% { 95.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 278049	(9.42, N/A) (N/A, -0.06, N/A)	306.0	N/A	0.8711 [1.0000]	87.1% { 84.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 961408	(3.66, N/A) (N/A, -0.06, N/A)	859.7	N/A	7.9622 [8.0000]	99.5% { 80.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 567388	(4.95, N/A) (N/A, -0.09, N/A)	677.6	N/A	3.7563 [4.0000]	93.9% { 81.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 485987	(6.10, N/A) (N/A, -0.09, N/A)	662.7	N/A	1.9454 [2.0000]	97.3% { 90.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 426996	(7.03, N/A) (N/A, -0.08, N/A)	645.9	N/A	1.9593 [2.0000]	98.0% { 87.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 469799	(7.85, N/A) (N/A, -0.08, N/A)	623.6	N/A	2.0053 [2.0000]	100.3% { 94.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 196241	(8.59, N/A) (N/A, -0.08, N/A)	331.3	N/A	1.0098 [1.0000]	101.0% { 89.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 243463	(9.27, N/A) (N/A, -0.07, N/A)	373.7	N/A	0.9366 [1.0000]	93.7% { 86.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A	0.0000 [1.0000]	0.0% { 0.0% }			S1,

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) 349119	(9.88, N/A) (N/A, -0.02, N/A)	640.2	N/A	0.9461 [1.0000]	94.6% { 90.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 200679	(10.12, N/A) (N/A, -0.01, N/A)	414.7	N/A	0.8188 [1.0000]	81.9% { 83.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1243843	(6.05, N/A) (N/A, -0.09, N/A)	653.6	N/A	1.8274 [2.0000]	91.4% { 90.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 703772	(7.97, N/A) (N/A, -0.08, N/A)	1021.2	N/A	1.9433 [2.0000]	97.2% { 93.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 920090	(9.42, N/A) (N/A, -0.07, N/A)	82.3	N/A	1.9281 [2.0000]	96.4% { 77.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 208461	(5.77, N/A) (N/A, -0.09, N/A)	614.0	N/A	3.6160 [4.0000]	90.4% { 93.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 287362	(7.50, N/A) (N/A, -0.08, N/A)	693.3	N/A	4.1402 [4.0000]	103.5% { 104.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 284164	(8.92, N/A) (N/A, -0.08, N/A)	462.0	N/A	4.0898 [4.0000]	102.2% { 96.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1248175	(10.16, N/A) (N/A, -0.02, N/A)	697.4	N/A	2.0692 [2.0000]	103.5% { 85.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 325759	(10.60, N/A) (N/A, -0.01, N/A)	1257.7	N/A	2.4735 [2.0000]	123.7% { 98.7% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 257195	(10.69, N/A) (N/A, -0.01, N/A)	672.7	N/A	2.1155 [2.0000]	105.8% { 90.4% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03941-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21A (8)
 Acquired: 2022/12/21 - 15:55

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) 455998	(9.47, N/A) (N/A, -0.06, N/A)	320.1	N/A	4.0185 [4.0000]	100.5% { 89.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 343842	(9.66, N/A) (N/A, -0.04, N/A)	325.4	N/A	3.4378 [4.0000]	85.9% { 73.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 382126	(10.56, N/A) (N/A, -0.01, N/A)	1054.7	N/A	20.6637 [20.0000]	103.3% { 88.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 168371	(10.66, N/A) (N/A, -0.01, N/A)	1121.1	N/A	19.9994 [20.0000]	100.0% { 92.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1038848	(6.44, N/A) (N/A, -0.08, N/A)	965.8	N/A	7.8213 [8.0000]	97.8% { 88.4% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633 SPLP****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2252011**Laboratory ID:** SB03941-SCV1**Sequence:** SB03941**Standard ID:** 22L0308

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	7.99	-0.1	30.00
PFPEA	4.00	4.05	1.3	30.00
PFHXA	2.00	2.06	2.9	30.00
PFHPA	2.00	1.83	-8.4	30.00
PFOA	2.00	1.92	-4.0	30.00
PFNA	2.00	1.98	-1.0	30.00
PFDA	2.00	1.94	-3.0	30.00
PFUnA	2.00	2.01	0.6	30.00
PFDOA	2.00	1.94	-2.8	30.00
PFTRDA	2.00	2.06	3.0	30.00
PFTEDA	2.00	2.52	25.9	30.00
PFBS	1.77	1.80	1.7	30.00
PFPEs	1.88	1.90	1.2	30.00
PFHXS	1.83	1.70	-7.0	30.00
PFHPS	1.91	1.91	-0.1	30.00
PFOS	1.86	1.92	3.4	30.00
PFNS	1.92	2.20	14.7	30.00
PFDS	1.93	2.24	16.0	30.00
PFDOS	1.94	2.09	7.7	30.00
4:2FTS	7.50	7.40	-1.3	30.00
6:2FTS	7.60	7.32	-3.6	30.00
8:2FTS	7.68	8.45	10.0	30.00
PFOSA	2.00	1.87	-6.3	30.00
NMeFOSA	8.00	7.40	-7.5	30.00
NEtFOSA	8.00	7.80	-2.5	30.00
NMeFOSAA	2.00	2.24	11.9	30.00
NEtFOSAA	2.00	1.95	-2.5	30.00

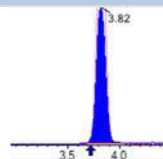
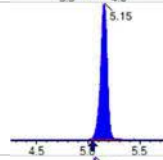
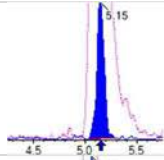
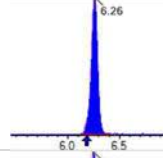
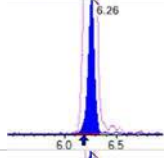
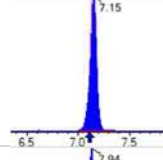
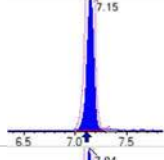
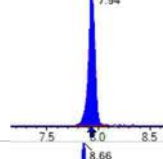
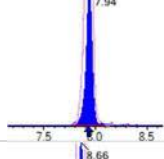
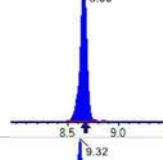
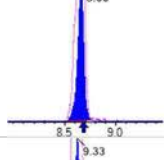
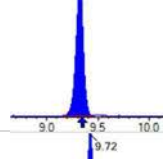
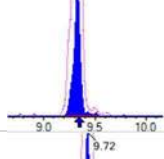
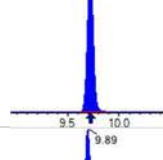
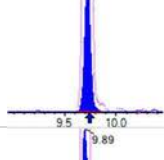
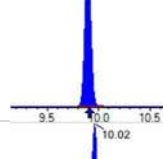
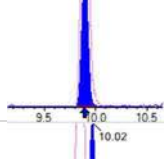
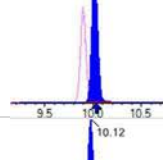
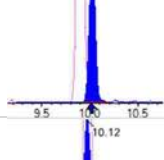
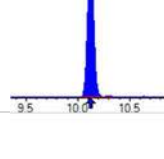
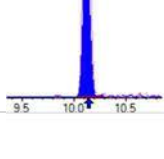
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633 SPLP****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2252011**Laboratory ID:** SB03941-SCV1**Sequence:** SB03941**Standard ID:** 22L0308

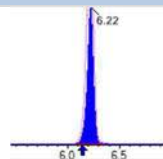
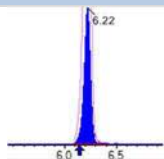
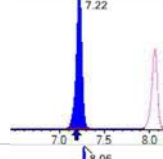
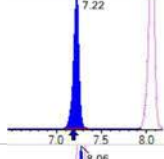
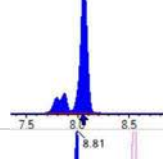
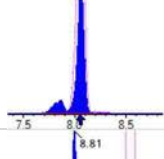
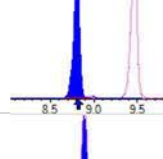
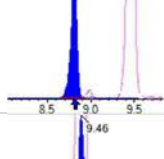
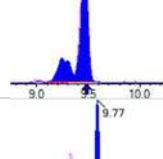
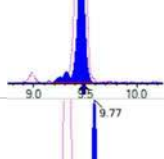
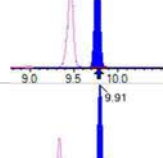
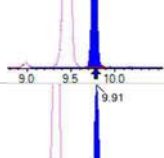
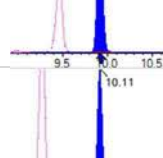
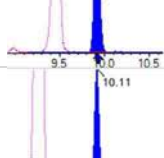
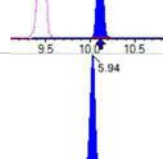
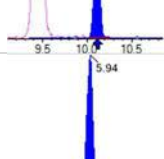
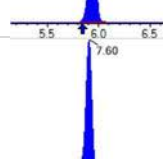
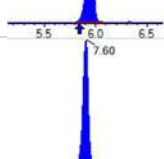
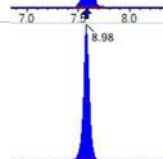
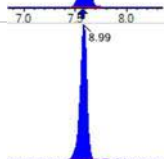

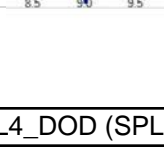
NMeFOSE	8.00	7.20	-10.0	30.00
NEtFOSE	8.00	7.47	-6.6	30.00
HFPO-DA	4.00	3.77	-5.8	30.00
ADONA	3.78	3.68	-2.6	30.00
PFEESA	3.56	3.55	-0.3	30.00
PFMPA	4.00	3.70	-7.5	30.00
PFMBA	4.00	3.61	-9.8	30.00
NFDHA	4.00	3.97	-0.8	30.00
9CL-PF3ONS	3.74	3.62	-3.2	30.00
11CL-PF3OUDS	3.78	3.53	-6.6	30.00
3:3FTCA	8.00	7.48	-6.5	30.00
5:3FTCA	8.00	8.11	1.4	30.00
7:3FTCA	8.00	8.03	0.3	30.00
13C4-PFBA	8.00	8.64	8.0	30.00
13C5-PFPEA	4.00	4.71	17.7	30.00
13C5-PFHXA	2.00	2.18	8.9	30.00
13C4-PFHPA	2.00	2.44	22.0	30.00
13C8-PFOA	2.00	2.51	25.6	30.00
13C9-PFNA	1.00	1.15	15.1	30.00
13C6-PFDA	1.00	1.02	1.6	30.00
13C7-PFUnA	1.00	1.01	0.9	30.00
13C2-PFDOA	1.00	1.12	12.1	30.00
13C2-PFTEDA	1.00	0.926	-7.4	30.00
13C3-PFBS	2.00	2.14	7.0	30.00
13C3-PFHXS	2.00	2.11	5.5	30.00
13C8-PFOS	2.00	2.03	1.7	30.00
13C2-4:2FTS	4.00	4.28	7.0	30.00
13C2-6:2FTS	4.00	4.19	4.8	30.00
13C2-8:2FTS	4.00	4.81	20.3	30.00

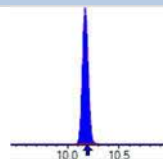
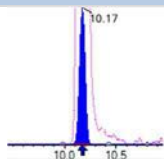
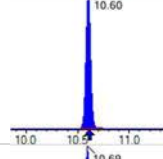
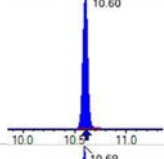
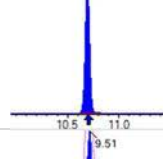
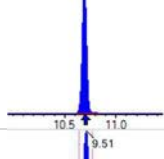
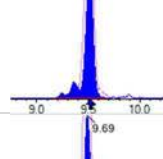
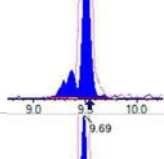
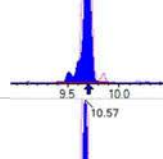
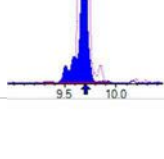
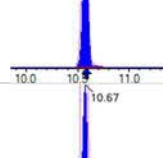
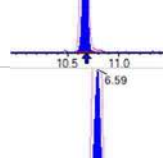
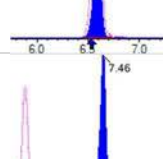
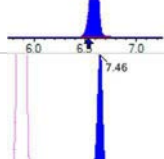
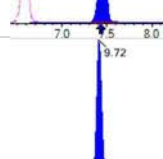
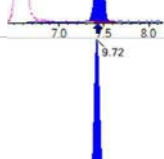
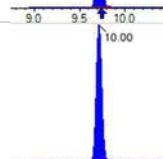
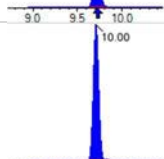
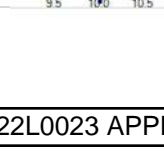
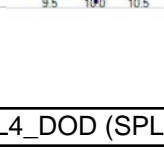
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633 SPLP****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2252011**Laboratory ID:** SB03941-SCV1**Sequence:** SB03941**Standard ID:** 22L0308

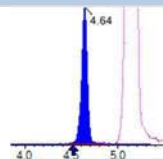
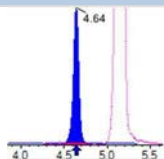
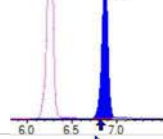
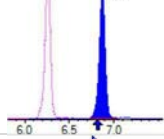
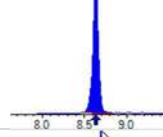
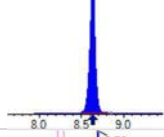
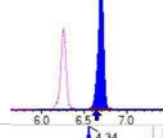
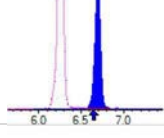
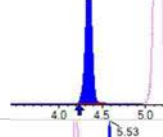
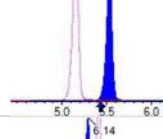
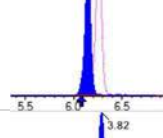
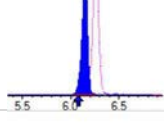
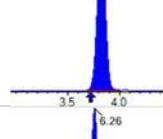
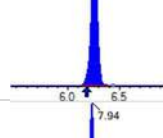
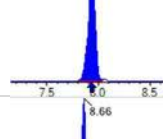
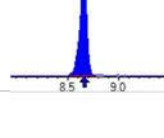
13C8-PFOSA	2.00	2.54	26.8	30.00
D5-NETFOSA	2.00	2.46	23.2	30.00
D3-NMEFOSA	2.00	2.31	15.5	30.00
D3-NMEFOSAA	4.00	3.87	-3.3	30.00
D5-NETFOSAA	4.00	4.12	3.0	30.00
D7-NMEFOSE	20.0	22.3	11.5	30.00
D9-NETFOSSE	20.0	21.7	8.5	30.00
13C3-HFPO-DA	8.00	9.26	15.7	30.00

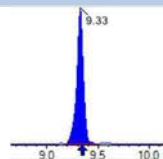
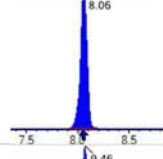
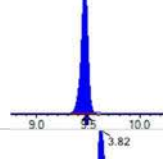
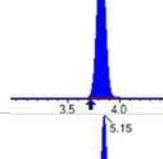
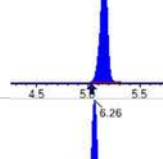
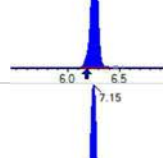
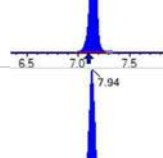
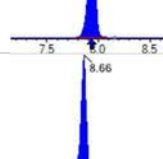
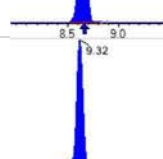
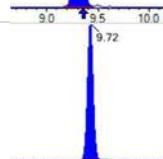

* Values outside of QC limits

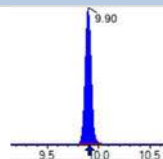
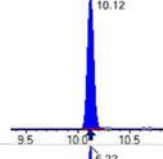
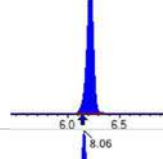
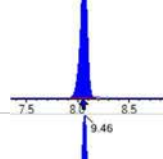
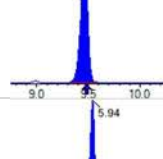
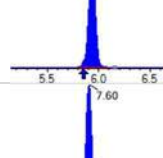
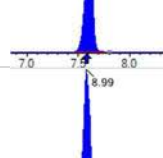
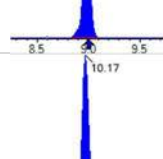
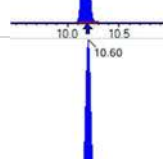
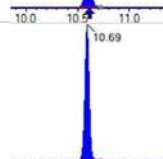

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 826160	(3.82, 1.00) (0.00, N/A, 0.0)	66.3	N/A 0.0 0.0	7.9908 [8.0000]	99.9%			
PFPeA	(262.9 / 219.0) 615408 (262.9 / 69.0) 7099	(5.15, 1.00) (0.00, N/A, 0.4)	793.3 166.5	0.0115 103.1 103.1	4.0518 [4.0000]	101.3%			
PFHxA	(313.0 / 269.0) 467843 (313.0 / 119.0) 45951	(6.26, 1.00) (0.00, N/A, 0.1)	507.4 322.7	0.0982 100.5 100.5	2.0587 [2.0000]	102.9%			
PFHpA	(363.0 / 319.0) 432075 (363.0 / 169.0) 138649	(7.15, 1.00) (0.00, N/A, 0.1)	541.7 385.0	0.3209 103.0 103.0	1.8321 [2.0000]	91.6%			
PFOA	(413.0 / 369.0) 540570 (413.0 / 169.0) 167693	(7.94, 1.00) (0.00, N/A, -0.3)	662.9 505.8	0.3102 94.9 94.9	1.9199 [2.0000]	96.0%			
PFNA	(463.0 / 419.0) 409308 (463.0 / 169.0) 78936	(8.66, 1.00) (0.00, N/A, -0.2)	495.2 94.8	0.1929 100.1 100.1	1.9793 [2.0000]	99.0%			
PFDA	(513.0 / 469.0) 482820 (513.0 / 169.0) 47535	(9.32, 1.00) (0.00, N/A, -0.3)	450.3 235.5	0.0985 103.0 103.0	1.9394 [2.0000]	97.0%			
PFUnA	(563.0 / 519.0) 587146 (563.0 / 169.0) 44298	(9.72, 1.00) (0.00, N/A, 0.0)	626.0 279.6	0.0754 86.9 86.9	2.0110 [2.0000]	100.6%			
PFDoA	(613.0 / 569.0) 686509 (613.0 / 169.0) 89917	(9.89, 1.00) (0.00, N/A, 0.0)	663.9 317.2	0.1310 94.1 94.1	1.9439 [2.0000]	97.2%			
PFTrDA	(663.0 / 619.0) 630517 (663.0 / 169.0) 105737	(10.02, 1.01) (N/A, -0.01, -0.3)	802.7 413.6	0.1677 81.9 81.9	2.0607 [2.0000]	103.0%			
PFTeDA	(713.0 / 669.0) 501366 (713.0 / 169.0) 87460	(10.12, 1.00) (0.00, N/A, 0.2)	703.1 221.5	0.1744 85.8 85.8	2.5178 [2.0000]	125.9%			

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) 721250 (298.9 / 99.0) 444102	(6.22, 1.00) (0.00, N/A, 0.0)	841.6 645.4	0.6157 100.0 100.0	1.7993 [1.7695]	101.7%			
PFPeS	(349.0 / 80.0) 1304493 (349.0 / 99.0) 488870	(7.22, 0.90) (N/A, 0.04, -0.1)	955.5 884.4	0.3748 105.3 105.3	1.9033 [1.8768]	101.4%			
PFHxS	(399.0 / 80.0) 1014894 (399.0 / 99.0) 344027	(8.06, 1.00) (0.00, N/A, 0.0)	2419.1 74677.8	0.3390 100.8 100.8	1.7027 [1.8220]	93.5%			
PFHpS	(449.0 / 80.0) 879262 (449.0 / 99.0) 257815	(8.81, 0.93) (N/A, -0.01, -0.3)	667.5 488.6	0.2932 107.1 107.1	1.9077 [1.9028]	100.3%			
PFOS	(499.0 / 80.0) 1102928 (499.0 / 99.0) 236253	(9.46, 1.00) (0.00, N/A, 0.1)	115.1 129.8	0.2142 88.1 88.1	1.9236 [1.8550]	103.7%			
PFNS	(549.0 / 80.0) 1400580 (549.0 / 99.0) 348700	(9.77, 1.03) (N/A, -0.01, 0.0)	867.1 541.9	0.2490 102.0 102.0	2.2021 [1.9198]	114.7%			
PFDS	(599.0 / 80.0) 1581305 (599.0 / 99.0) 390095	(9.91, 1.05) (N/A, -0.01, 0.2)	992.5 464.1	0.2467 109.6 109.6	2.2395 [1.9262]	116.3%			
PFDoS	(698.9 / 80.0) 616747 (698.9 / 99.0) 133778	(10.11, 1.07) (N/A, -0.01, 0.0)	738.0 572.8	0.2169 88.7 88.7	2.0898 [1.9391]	107.8%			
4:2FTS	(327.0 / 307.0) 1514379 (327.0 / 81.0) 770935	(5.94, 1.00) (0.00, N/A, -0.1)	803.6 624.3	0.5091 103.1 103.1	7.3999 [7.4762]	99.0%			
6:2FTS	(427.0 / 407.0) 821840 (427.0 / 81.0) 567834	(7.60, 1.00) (0.00, N/A, 0.1)	946.6 705.6	0.6909 88.8 88.8	7.3229 [7.5923]	96.5%			
8:2FTS	(527.0 / 507.0) 1122259 (527.0 / 81.0) 538134	(8.98, 1.00) (0.00, N/A, -0.3)	414.3 515.2	0.4795 84.7 84.7	8.4461 [7.6663]	110.2%			

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) 1474063 (498.0 / 478.0) 37178	(10.17, 1.00) (0.00, N/A, -0.1)	843.1 534.3	0.0252 121.0 121.0	1.8741 [2.0000]	93.7%			
NMeFOSA	(511.9 / 219.0) 999598 (511.9 / 169.0) 689735	(10.60, 1.00) (0.00, N/A, 0.0)	861.8 1151.0	0.6900 95.8 95.8	7.4034 [8.0000]	92.5%			
NEIFOSA	(526.0 / 219.0) 1146883 (526.0 / 169.0) 1178077	(10.69, 1.00) (0.00, N/A, 0.0)	1268.4 1089.4	1.0272 97.1 97.1	7.8009 [8.0000]	97.5%			
NMeFOSAA	(570.0 / 419.0) 208249 (570.0 / 483.0) 104771	(9.51, 1.00) (0.00, N/A, 0.2)	375.1 198.5	0.5031 81.8 81.8	2.2376 [2.0000]	111.9%			
NEIFOSAA	(584.0 / 419.0) 196413 (584.0 / 526.0) 111297	(9.69, 1.00) (0.01, N/A, 0.2)	455.1 117896.6	0.5666 77.3 77.3	1.9508 [2.0000]	97.5%			
NMeFOSE	(616.1 / 59.0) 203936	(10.57, 1.00) (0.01, N/A, 0.0)	1358.7	N/A 0.0 0.0	7.2019 [8.0000]	90.0%			
NEtFOSE	(630.0 / 59.0) 38033	(10.67, 1.00) (0.01, N/A, 0.0)	607.4	N/A 0.0 0.0	7.4728 [8.0000]	93.4%			
HFPO-DA	(285.0 / 169.0) 342689 (285.0 / 185.0) 1020987	(6.59, 1.00) (0.00, N/A, -0.1)	626.5 698.6	2.9793 108.5 108.5	3.7699 [4.0000]	94.2%			
ADONA	(377.0 / 85.0) 1486505 (377.0 / 251.0) 199325	(7.46, 1.13) (N/A, 0.03, 0.1)	678.2 385.1	0.1341 107.7 107.7	3.6817 [3.7708]	97.6%			
9CI-Pf3ONS	(531.0 / 351.0) 4066455 (533.0 / 353.0) 1234707	(9.72, 1.47) (N/A, -0.01, 0.0)	855.0 727.0	0.3036 102.6 102.6	3.6202 [3.7330]	97.0%			
11CI-PF3OUDS	(631.0 / 451.0) 1991501 (633.0 / 453.0) 617773	(10.00, 1.52) (N/A, -0.01, 0.0)	1070.3 1217.2	0.3102 93.8 93.8	3.5291 [3.7728]	93.5%			

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
3:3FTCA	(241.0 / 177.0) 39196 (241.0 / 117.0) 66770	(4.64, 0.90) (N/A, 0.12, 0.0)	403.7 453.1	1.7035 101.8 101.8	7.4773 [8.0000]	93.5%			
5:3FTCA	(341.0 / 236.7) 325755 (341.0 / 217.0) 500274	(6.87, 1.10) (N/A, 0.05, 0.0)	422.5 555.2	1.5357 104.9 104.9	8.1123 [8.0000]	101.4%			
7:3FTCA	(441.0 / 317.0) 370796 (441.0 / 337.0) 321550	(8.63, 1.38) (N/A, 0.00, 0.0)	380.2 406.9	0.8672 103.5 103.5	8.0251 [8.0000]	100.3%			
PFEESA	(315.0 / 135.0) 883452 (315.0 / 83.0) 263398	(6.70, 1.07) (N/A, 0.06, 0.2)	692.7 623.8	0.2981 97.1 97.1	3.5508 [3.5698]	99.5%			
PFMPA	(229.0 / 85.0) 154156	(4.34, 0.84) (N/A, 0.12, 0.0)	850.9	N/A 0.0 0.0	3.6980 [4.0000]	92.5%			
PFMBA	(279.0 / 85.0) 519912	(5.53, 1.07) (N/A, 0.11, 0.0)	881.8	N/A 0.0 0.0	3.6083 [4.0000]	90.2%			
NFDHA	(295.0 / 201.0) 454901 (295.0 / 85.0) 446222	(6.14, 0.98) (N/A, 0.08, -0.1)	909.2 665.8	0.9809 111.1 111.1	3.9698 [4.0000]	99.2%			
13C3_PFBA_IIS	(216.0 / 172.0) 142617	(3.82, N/A) (N/A, 0.11, N/A)	772.3	N/A	1.0246 [1.0000]	102.5% { 94.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 211230	(6.26, N/A) (N/A, 0.07, N/A)	637.8	N/A	0.9147 [1.0000]	91.5% { 90.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 207848	(7.94, N/A) (N/A, 0.01, N/A)	791.1	N/A	0.9454 [1.0000]	94.5% { 87.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 190473	(8.66, N/A) (N/A, -0.01, N/A)	365.8	N/A	1.0286 [1.0000]	102.9% { 94.2% }			

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) 180965	(9.33, N/A) (N/A, -0.02, N/A)	300.8	N/A	0.9792 [1.0000]	97.9% { 104.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 404075	(8.06, N/A) (N/A, 0.01, N/A)	755.5	N/A	1.0009 [1.0000]	100.1% { 95.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 302637	(9.46, N/A) (N/A, -0.02, N/A)	490.6	N/A	0.9482 [1.0000]	94.8% { 92.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1267826	(3.82, N/A) (N/A, 0.10, N/A)	950.4	N/A	8.6374 [8.0000]	108.0% { 106.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 691765	(5.15, N/A) (N/A, 0.12, N/A)	655.0	N/A	4.7068 [4.0000]	117.7% { 99.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 529227	(6.26, N/A) (N/A, 0.07, N/A)	586.3	N/A	2.1772 [2.0000]	108.9% { 98.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 517454	(7.15, N/A) (N/A, 0.04, N/A)	625.4	N/A	2.4402 [2.0000]	122.0% { 105.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 572643	(7.94, N/A) (N/A, 0.01, N/A)	628.4	N/A	2.5123 [2.0000]	125.6% { 115.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 241000	(8.66, N/A) (N/A, -0.01, N/A)	482.3	N/A	1.1506 [1.0000]	115.1% { 110.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 261552	(9.32, N/A) (N/A, -0.02, N/A)	324.9	N/A	1.0162 [1.0000]	101.6% { 93.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 369444	(9.72, N/A) (N/A, -0.01, N/A)	383.8	N/A	1.0092 [1.0000]	100.9% { 92.7% }			

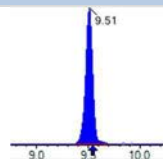
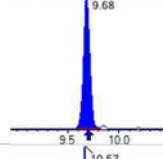
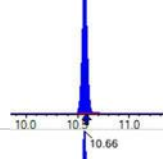
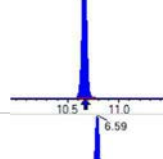
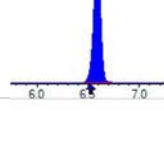
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 409663	(9.90, N/A) (N/A, -0.01, N/A)	784.5	N/A	1.1211 [1.0000]	112.1% { 105.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 224684	(10.12, N/A) (N/A, -0.01, N/A)	303.5	N/A	0.9259 [1.0000]	92.6% { 92.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1462249	(6.22, N/A) (N/A, 0.08, N/A)	885.8	N/A	2.1403 [2.0000]	107.0% { 106.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 767313	(8.06, N/A) (N/A, 0.01, N/A)	732.1	N/A	2.1109 [2.0000]	105.5% { 101.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1056462	(9.46, N/A) (N/A, -0.02, N/A)	326.6	N/A	2.0340 [2.0000]	101.7% { 88.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 247570	(5.94, N/A) (N/A, 0.09, N/A)	728.4	N/A	4.2784 [4.0000]	107.0% { 110.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 291971	(7.60, N/A) (N/A, 0.02, N/A)	611.1	N/A	4.1910 [4.0000]	104.8% { 106.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 335471	(8.99, N/A) (N/A, -0.02, N/A)	757.5	N/A	4.8103 [4.0000]	120.3% { 113.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1664459	(10.17, N/A) (N/A, -0.01, N/A)	652.8	N/A	2.5352 [2.0000]	126.8% { 113.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 331270	(10.60, N/A) (N/A, -0.01, N/A)	916.6	N/A	2.3109 [2.0000]	115.5% { 100.4% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 325977	(10.69, N/A) (N/A, -0.01, N/A)	1349.4	N/A	2.4634 [2.0000]	123.2% { 114.5% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03941-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21A (10)
 Acquired: 2022/12/21 - 16:20

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) 477723	(9.51, N/A) (N/A, -0.02, N/A)	407.1	N/A	3.8679 [4.0000]	96.7% { 93.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 448595	(9.68, N/A) (N/A, -0.01, N/A)	368.4	N/A	4.1207 [4.0000]	103.0% { 95.2% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 448688	(10.57, N/A) (N/A, -0.01, N/A)	1653.3	N/A	22.2917 [20.0000]	111.5% { 104.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 198798	(10.66, N/A) (N/A, -0.01, N/A)	1695.3	N/A	21.6950 [20.0000]	108.5% { 109.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1196436	(6.59, N/A) (N/A, 0.06, N/A)	797.8	N/A	9.2576 [8.0000]	115.7% { 101.9% }			

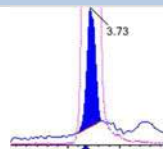
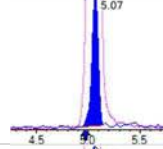
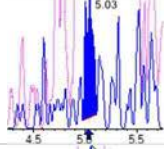
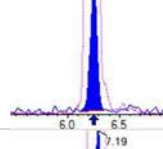
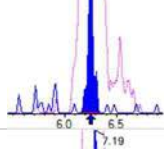
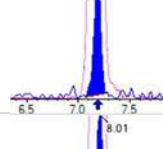
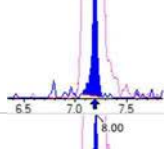
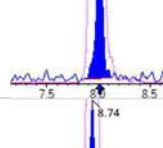
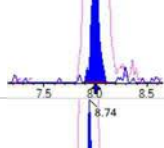
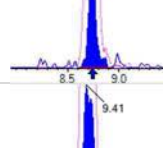
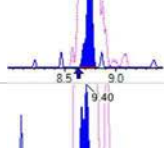
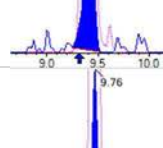
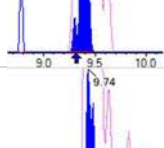
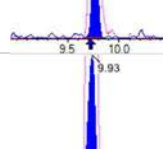
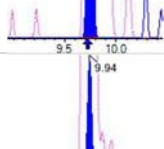
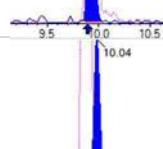
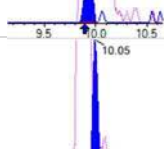
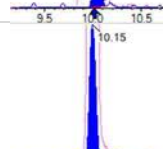
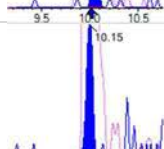

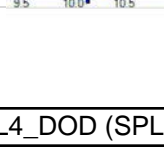
LOW-CONCENTRATION CALIBRATION VERIFICATION**EPA 1633 SPLP****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2252011**Laboratory ID:** SB03942-LCV1**Sequence:** SB03942**Standard ID:** 22L0300

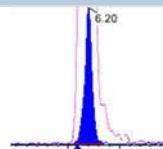
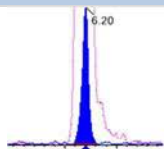
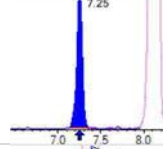
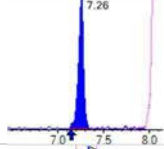
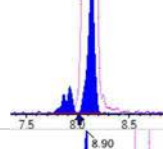
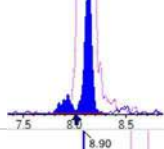
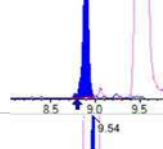
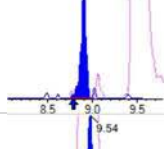
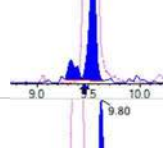
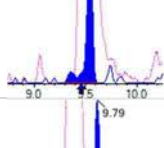
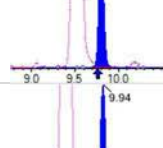
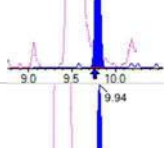
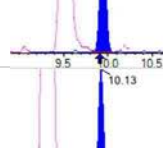
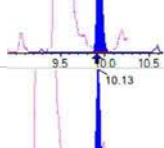
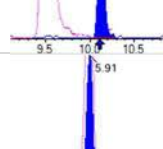
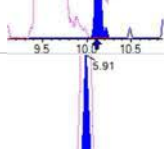
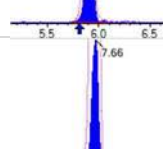
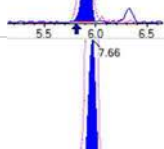
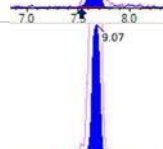
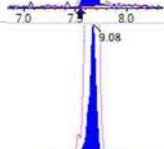

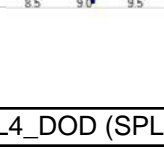
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.380	-4.9	30.00
PFPEA	0.200	0.204	2.1	30.00
PFHXA	0.100	0.0988	-1.2	30.00
PFHPA	0.100	0.0949	-5.1	30.00
PFOA	0.100	0.113	12.6	30.00
PFNA	0.100	0.127	26.7	30.00
PFDA	0.100	0.105	4.6	30.00
PFUnA	0.100	0.0996	-0.4	30.00
PFDOA	0.100	0.100	0.3	30.00
PFTRDA	0.100	0.107	7.1	30.00
PFTEDA	0.100	0.0908	-9.2	30.00
PFBS	0.0885	0.0780	-11.8	30.00
PFPEs	0.0940	0.0901	-4.1	30.00
PFHXS	0.0915	0.0875	-4.4	30.00
PFHPS	0.0955	0.0894	-6.4	30.00
PFOS	0.0930	0.110	18.8	30.00
PFNS	0.0960	0.112	16.2	30.00
PFDS	0.0965	0.0969	0.4	30.00
PFDOS	0.0970	0.120	23.6	30.00
4:2FTS	0.375	0.370	-1.4	30.00
6:2FTS	0.380	0.398	4.7	30.00
8:2FTS	0.384	0.473	23.2	30.00
PFOSA	0.100	0.112	12.3	30.00
NMeFOSA	0.400	0.444	11.1	30.00
NEtFOSA	0.400	0.429	7.2	30.00
NMeFOSAA	0.100	0.125	25.0	30.00
NEtFOSAA	0.100	0.0714	-28.6	30.00
NMeFOSE	0.400	0.341	-14.8	30.00

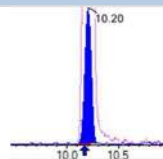
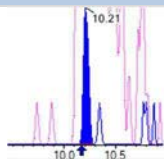
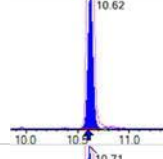
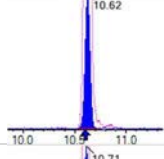
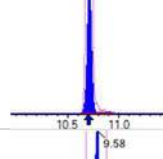
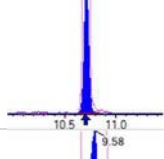
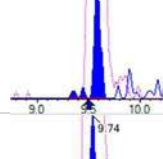
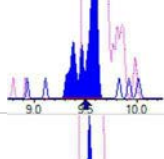
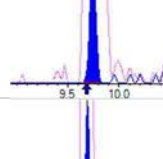
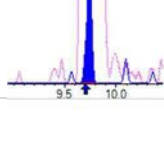
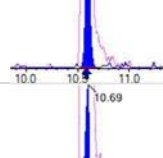
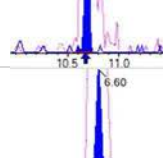
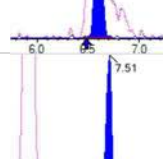
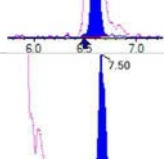
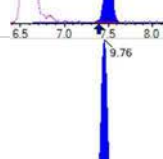
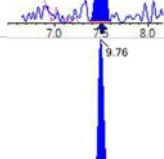
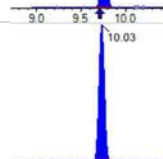
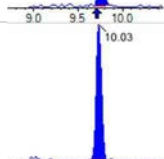
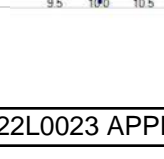
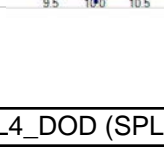
LOW-CONCENTRATION CALIBRATION VERIFICATION**EPA 1633 SPLP****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2252011**Laboratory ID:** SB03942-LCV1**Sequence:** SB03942**Standard ID:** 22L0300

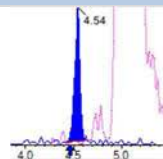
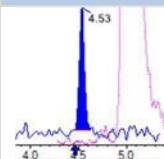
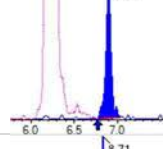
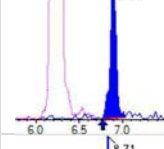
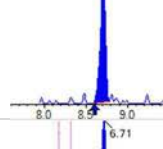
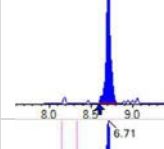
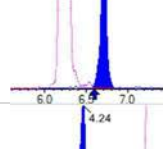
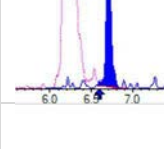
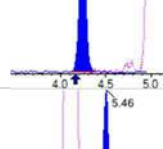
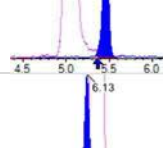
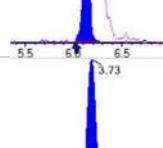
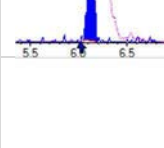
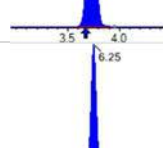
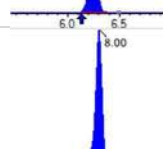
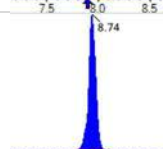

NEtFOSE	0.400	0.347	-13.3	30.00
HFPO-DA	0.200	0.227	13.3	30.00
ADONA	0.189	0.212	12.0	30.00
PFEESA	0.178	0.179	0.7	30.00
PFMPA	0.200	0.201	0.7	30.00
PFMBA	0.200	0.190	-4.9	30.00
NFDHA	0.200	0.233	16.4	30.00
9CL-PF3ONS	0.187	0.180	-3.8	30.00
11CL-PF3OUDS	0.189	0.205	8.6	30.00
3:3FTCA	0.400	0.374	-6.6	30.00
5:3FTCA	0.400	0.397	-0.7	30.00
7:3FTCA	0.400	0.360	-10.0	30.00

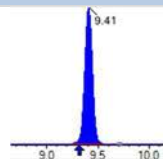
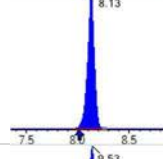
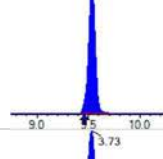
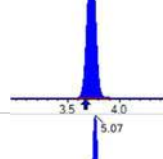
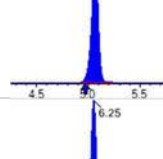
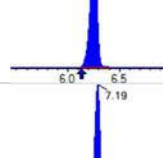
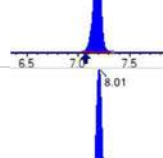
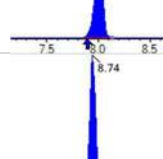
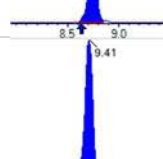
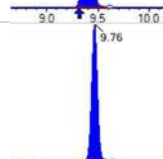

* Values outside of QC limits

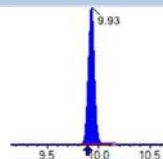
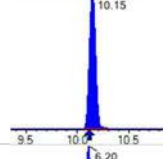
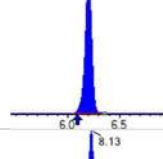
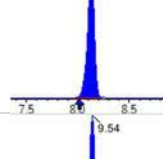
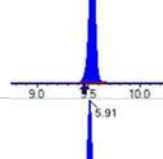
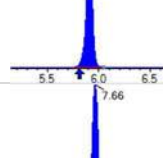
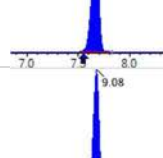
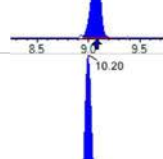
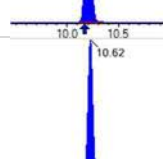
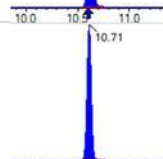

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 41141	(3.73, 1.00) (0.00, N/A, 0.0)	47.8	N/A 0.0 0.0	0.3803 [0.4000]	95.1%			
PFPeA	(262.9 / 219.0) 30554 (262.9 / 69.0) 325	(5.07, 1.00) (0.00, N/A, 2.1)	211.2 7.3	0.0106 95.0 91.7	0.2041 [0.2000]	102.1%			
PFHxA	(313.0 / 269.0) 24328 (313.0 / 119.0) 3145	(6.25, 1.00) (0.00, N/A, 0.2)	88.1 38.8	0.1293 132.2 139.4	0.0988 [0.1000]	98.8%			
PFHpA	(363.0 / 319.0) 21393 (363.0 / 169.0) 6469	(7.19, 1.00) (0.00, N/A, -0.1)	70.0 77.3	0.3024 97.1 97.0	0.0949 [0.1000]	94.9%			
PFOA	(413.0 / 369.0) 29346 (413.0 / 169.0) 7150	(8.01, 1.00) (0.01, N/A, 0.8)	66.8 96.1	0.2436 74.5 74.1	0.1126 [0.1000]	112.6%			
PFNA	(463.0 / 419.0) 24226 (463.0 / 169.0) 5709	(8.74, 1.00) (0.00, N/A, -0.1)	78.3 64.7	0.2356 122.3 102.7	0.1267 [0.1000]	126.7%			
PFDA	(513.0 / 469.0) 27534 (513.0 / 169.0) 2848	(9.41, 1.00) (0.00, N/A, 0.6)	46.1 562.6	0.1034 108.2 95.8	0.1046 [0.1000]	104.6%			
PFUnA	(563.0 / 519.0) 31130 (563.0 / 169.0) 2602	(9.76, 1.00) (0.00, N/A, 1.4)	106.3 159.9	0.0836 96.2 81.6	0.0996 [0.1000]	99.6%			
PFDoA	(613.0 / 569.0) 35466 (613.0 / 169.0) 5220	(9.93, 1.00) (0.00, N/A, -0.5)	112.8 105.5	0.1472 105.7 125.5	0.1003 [0.1000]	100.3%			
PFTrDA	(663.0 / 619.0) 32812 (663.0 / 169.0) 7308	(10.04, 1.01) (N/A, 0.02, -0.9)	177.8 52.5	0.2227 108.8 104.3	0.1071 [0.1000]	107.1%			
PFTeDA	(713.0 / 669.0) 25181 (713.0 / 169.0) 4661	(10.15, 1.00) (0.00, N/A, -0.1)	133.2 23.0	0.1851 91.0 105.2	0.0908 [0.1000]	90.8%			

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
PFBS	(298.9 / 80.0) 30287 (298.9 / 99.0) 25468	(6.20, 1.00) (0.00, N/A, 0.0)	220.5 193.2	0.8409 136.6 134.6	0.0780 [0.0885]	88.2%			
PFPeS	(349.0 / 80.0) 63750 (349.0 / 99.0) 24470	(7.25, 0.89) (N/A, 0.12, -0.1)	300.6 207.2	0.3838 107.8 111.9	0.0901 [0.0938]	96.0%			
PFHxS	(399.0 / 80.0) 53825 (399.0 / 99.0) 19797	(8.13, 1.00) (0.00, N/A, 0.1)	1871.9 426.5	0.3678 109.4 108.3	0.0875 [0.0911]	96.0%			
PFHpS	(449.0 / 80.0) 44546 (449.0 / 99.0) 13518	(8.90, 0.93) (N/A, 0.11, -0.3)	190.4 137.1	0.3035 110.9 109.1	0.0894 [0.0951]	93.9%			
PFOS	(499.0 / 80.0) 68479 (499.0 / 99.0) 15540	(9.54, 1.00) (0.01, N/A, 0.0)	69.2 62.3	0.2269 93.3 105.7	0.1105 [0.0927]	119.1%			
PFNS	(549.0 / 80.0) 76706 (549.0 / 99.0) 15698	(9.80, 1.03) (N/A, 0.03, 0.4)	274.7 136.4	0.2047 83.9 82.0	0.1115 [0.0960]	116.2%			
PFDS	(599.0 / 80.0) 73955 (599.0 / 99.0) 18474	(9.94, 1.04) (N/A, 0.03, 0.4)	264.5 367.6	0.2498 111.0 120.4	0.0969 [0.0963]	100.6%			
PFDoS	(698.9 / 80.0) 38269 (698.9 / 99.0) 6612	(10.13, 1.06) (N/A, 0.01, -0.1)	242.4 521.6	0.1728 70.6 69.8	0.1199 [0.0970]	123.7%			
4:2FTS	(327.0 / 307.0) 75753 (327.0 / 81.0) 38274	(5.91, 1.00) (0.00, N/A, 0.4)	381.0 164.8	0.5052 102.3 97.9	0.3697 [0.3738]	98.9%			
6:2FTS	(427.0 / 407.0) 43176 (427.0 / 81.0) 32621	(7.66, 1.00) (0.00, N/A, 0.0)	217.3 151.6	0.7555 97.1 116.7	0.3978 [0.3796]	104.8%			
8:2FTS	(527.0 / 507.0) 47587 (527.0 / 81.0) 25167	(9.07, 1.00) (0.00, N/A, -0.1)	1490.9 106.9	0.5289 93.4 65.8	0.4729 [0.3833]	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) 80611 (498.0 / 478.0) 1500	(10.20, 1.00) (0.00, N/A, -0.5)	247.9 35.5	0.0186 89.3 79.4	0.1123 [0.1000]	112.3%			
NMeFOSA	(511.9 / 219.0) 59421 (511.9 / 169.0) 35780	(10.62, 1.00) (0.00, N/A, -0.1)	465.5 523.4	0.6021 83.6 93.3	0.4444 [0.4000]	111.1%			
NEtFOSA	(526.0 / 219.0) 61287 (526.0 / 169.0) 68369	(10.71, 1.00) (0.00, N/A, 0.0)	501.1 494.4	1.1156 105.5 109.6	0.4290 [0.4000]	107.2%			
NMeFOSAA	(570.0 / 419.0) 12306 (570.0 / 483.0) 7076	(9.58, 1.00) (0.01, N/A, 0.0)	368.8 69.6	0.5750 93.5 119.2	0.1250 [0.1000]	125.0%			
NEtFOSAA	(584.0 / 419.0) 8076 (584.0 / 526.0) 4721	(9.74, 1.00) (0.01, N/A, 0.2)	355.9 1475.7	0.5846 79.7 93.7	0.0714 [0.1000]	71.4%			
NMeFOSE	(616.1 / 59.0) 10963	(10.59, 1.00) (0.00, N/A, 0.0)	146.1	N/A 0.0 0.0	0.3407 [0.4000]	85.2%			
NEtFOSE	(630.0 / 59.0) 1997	(10.69, 1.00) (0.01, N/A, 0.0)	179.0	N/A 0.0 0.0	0.3470 [0.4000]	86.7%			
HFPO-DA	(285.0 / 169.0) 20222 (285.0 / 185.0) 49730	(6.60, 1.00) (0.00, N/A, 0.0)	267.0 240.0	2.4592 89.6 85.8	0.2266 [0.2000]	113.3%			
ADONA	(377.0 / 85.0) 83921 (377.0 / 251.0) 10260	(7.51, 1.14) (N/A, 0.12, 0.4)	313.2 33.1	0.1223 98.2 88.3	0.2117 [0.1885]	112.3%			
9CI-Pf3ONS	(531.0 / 351.0) 214078 (533.0 / 353.0) 63026	(9.76, 1.48) (N/A, 0.04, 0.2)	432.7 156.3	0.2944 99.5 94.4	0.1799 [0.1867]	96.4%			
11CI-PF3OUDS	(631.0 / 451.0) 113702 (633.0 / 453.0) 33919	(10.03, 1.52) (N/A, 0.02, -0.1)	1815.6 193.5	0.2983 90.2 106.0	0.2052 [0.1886]	108.8%			

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
3:3FTCA	(241.0 / 177.0) 1930 (241.0 / 117.0) 3721	(4.54, 0.90) (N/A, 0.09, 0.5)	89.5 54.6	1.9279 115.2 112.0	0.3736 [0.4000]	93.4%			
5:3FTCA	(341.0 / 236.7) 17273 (341.0 / 217.0) 25568	(6.90, 1.10) (N/A, 0.13, 0.1)	160.2 86.0	1.4802 101.1 95.6	0.3972 [0.4000]	99.3%			
7:3FTCA	(441.0 / 317.0) 18017 (441.0 / 337.0) 16081	(8.71, 1.39) (N/A, 0.11, 0.0)	89.1 136.9	0.8925 106.6 110.2	0.3601 [0.4000]	90.0%			
PFEESA	(315.0 / 135.0) 48322 (315.0 / 83.0) 13710	(6.71, 1.07) (N/A, 0.12, 0.3)	335.2 78.3	0.2837 92.4 95.3	0.1793 [0.1785]	100.5%			
PFMPA	(229.0 / 85.0) 8272	(4.24, 0.84) (N/A, 0.07, 0.0)	230.1	N/A 0.0 0.0	0.2014 [0.2000]	100.7%			
PFMBA	(279.0 / 85.0) 27001	(5.46, 1.08) (N/A, 0.10, 0.0)	305.6	N/A 0.0 0.0	0.1902 [0.2000]	95.1%			
NFDHA	(295.0 / 201.0) 28882 (295.0 / 85.0) 22243	(6.13, 0.98) (N/A, 0.12, 0.3)	266.3 73.4	0.7701 87.2 82.7	0.2327 [0.2000]	116.4%			
13C3_PFBA_IIS	(216.0 / 172.0) 157154	(3.73, N/A) (N/A, 0.06, N/A)	815.8	N/A	1.1290 [1.0000]	112.9% {96.4%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 234843	(6.25, N/A) (N/A, 0.11, N/A)	769.3	N/A	1.0170 [1.0000]	101.7% {105.1%}			
13C4_PFOA_IIS	(417.0 / 372.0) 229877	(8.00, N/A) (N/A, 0.12, N/A)	722.5	N/A	1.0456 [1.0000]	104.6% {94.3%}			
13C5_PFNA_IIS	(468.0 / 423.0) 195190	(8.74, N/A) (N/A, 0.11, N/A)	470.1	N/A	1.0540 [1.0000]	105.4% {108.3%}			

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) 207631	(9.41, N/A) (N/A, 0.10, N/A)	424.3	N/A	1.1235 [1.0000]	112.3% { 103.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 408283	(8.13, N/A) (N/A, 0.12, N/A)	765.0	N/A	1.0113 [1.0000]	101.1% { 98.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 298315	(9.53, N/A) (N/A, 0.08, N/A)	545.7	N/A	0.9346 [1.0000]	93.5% { 88.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1326737	(3.73, N/A) (N/A, 0.06, N/A)	902.1	N/A	8.2026 [8.0000]	102.5% { 106.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 681681	(5.07, N/A) (N/A, 0.09, N/A)	719.6	N/A	4.1718 [4.0000]	104.3% { 102.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 573169	(6.25, N/A) (N/A, 0.12, N/A)	669.8	N/A	2.1209 [2.0000]	106.0% { 108.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 494854	(7.19, N/A) (N/A, 0.12, N/A)	684.7	N/A	2.0990 [2.0000]	104.9% { 106.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 529997	(8.01, N/A) (N/A, 0.12, N/A)	899.8	N/A	2.1024 [2.0000]	105.1% { 103.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 222867	(8.74, N/A) (N/A, 0.11, N/A)	308.1	N/A	1.0383 [1.0000]	103.8% { 121.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 276540	(9.41, N/A) (N/A, 0.10, N/A)	273.5	N/A	0.9365 [1.0000]	93.6% { 110.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 395399	(9.76, N/A) (N/A, 0.04, N/A)	569.5	N/A	0.9413 [1.0000]	94.1% { 122.9% }			

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) 410361	(9.93, N/A) (N/A, 0.03, N/A)	304.9	N/A	0.9788 [1.0000]	97.9% { 111.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 312962	(10.15, N/A) (N/A, 0.03, N/A)	459.9	N/A	1.1240 [1.0000]	112.4% { 113.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1415655	(6.20, N/A) (N/A, 0.11, N/A)	648.7	N/A	2.0508 [2.0000]	102.5% { 100.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 792061	(8.13, N/A) (N/A, 0.12, N/A)	965.5	N/A	2.1565 [2.0000]	107.8% { 114.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1142315	(9.54, N/A) (N/A, 0.08, N/A)	557.9	N/A	2.2311 [2.0000]	111.6% { 107.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 247848	(5.91, N/A) (N/A, 0.11, N/A)	722.0	N/A	4.2391 [4.0000]	106.0% { 110.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 282391	(7.66, N/A) (N/A, 0.12, N/A)	608.0	N/A	4.0117 [4.0000]	100.3% { 98.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 254040	(9.08, N/A) (N/A, 0.11, N/A)	494.1	N/A	3.6051 [4.0000]	90.1% { 112.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1518867	(10.20, N/A) (N/A, 0.03, N/A)	833.6	N/A	2.3469 [2.0000]	117.3% { 107.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 328052	(10.62, N/A) (N/A, 0.02, N/A)	724.7	N/A	2.3216 [2.0000]	116.1% { 96.8% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 316775	(10.71, N/A) (N/A, 0.02, N/A)	1067.4	N/A	2.4285 [2.0000]	121.4% { 105.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-LCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (2)
 Acquired: 2022/12/21 - 16:58

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) 505276	(9.58, N/A) (N/A, 0.07, N/A)	474.8	N/A	4.1503 [4.0000]	103.8% { 87.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 504083	(9.73, N/A) (N/A, 0.05, N/A)	624.1	N/A	4.6975 [4.0000]	117.4% { 111.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 509850	(10.59, N/A) (N/A, 0.02, N/A)	886.1	N/A	25.6974 [20.0000]	128.5% { 108.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 224772	(10.68, N/A) (N/A, 0.02, N/A)	1294.7	N/A	24.8849 [20.0000]	124.4% { 102.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1174695	(6.60, N/A) (N/A, 0.12, N/A)	735.5	N/A	8.1755 [8.0000]	102.2% { 96.7% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633 SPLP

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

Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2252011
 Sequence: SB03942

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV1	PFBA	20.0	21.3	106	ng/mL	+/- 30.00%
	PFPEA	10.0	9.76	97.6	ng/mL	+/- 30.00%
	PFHXA	5.00	5.10	102	ng/mL	+/- 30.00%
	PFHPA	5.00	5.07	101	ng/mL	+/- 30.00%
	PFOA	5.00	4.50	90.0	ng/mL	+/- 30.00%
	PFNA	5.00	5.23	105	ng/mL	+/- 30.00%
	PFDA	5.00	4.94	98.7	ng/mL	+/- 30.00%
	PFUnA	5.00	5.37	107	ng/mL	+/- 30.00%
	PFDOA	5.00	5.16	103	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.01	100	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.83	96.5	ng/mL	+/- 30.00%
	PFBS	4.42	4.73	107	ng/mL	+/- 30.00%
	PFPEs	4.70	5.08	108	ng/mL	+/- 30.00%
	PFHXS	4.58	4.78	104	ng/mL	+/- 30.00%
	PFHPS	4.78	5.06	106	ng/mL	+/- 30.00%
	PFOS	4.65	4.75	102	ng/mL	+/- 30.00%
	PFNS	4.80	5.09	106	ng/mL	+/- 30.00%
	PFDS	4.82	5.54	115	ng/mL	+/- 30.00%
	PFDOS	4.85	4.62	95.3	ng/mL	+/- 30.00%
	4:2FTS	18.8	17.7	94.1	ng/mL	+/- 30.00%
	6:2FTS	19.0	19.9	105	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.6	96.9	ng/mL	+/- 30.00%
	PFOSA	5.00	5.61	112	ng/mL	+/- 30.00%
	NMeFOSA	20.0	19.7	98.4	ng/mL	+/- 30.00%
	NEtFOSA	20.0	23.4	117	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.01	100	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.63	92.7	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.7	98.7	ng/mL	+/- 30.00%
	NEtFOSE	20.0	17.1	85.4	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.65	96.5	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633 SPLP

Laboratory: APPL, LLC

Work Order: 22L0023

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

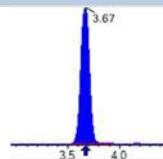
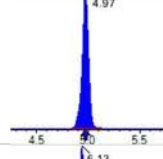
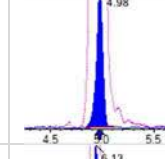
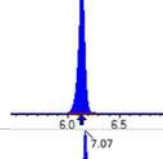
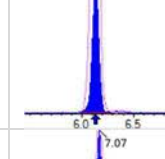
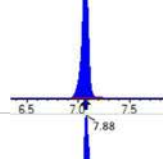
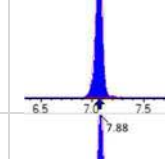
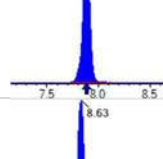
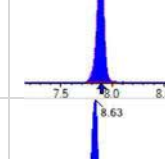
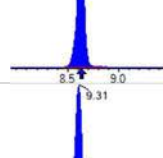
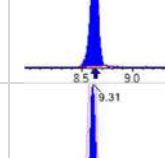
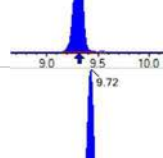
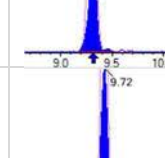
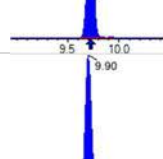
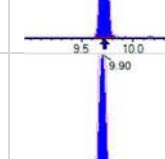
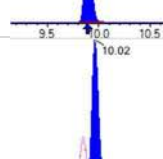
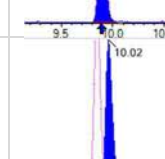
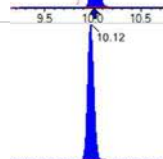
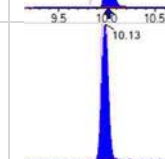
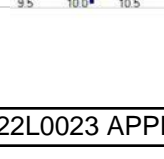
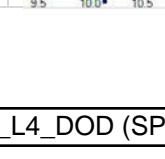
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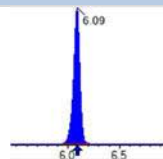
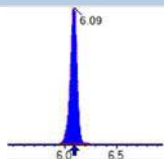
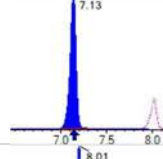
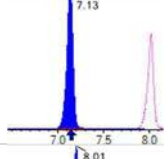
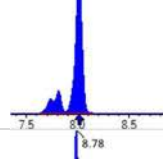
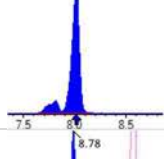
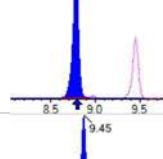
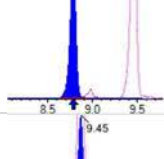
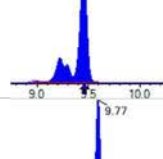
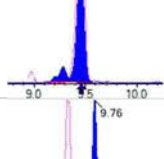
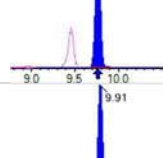
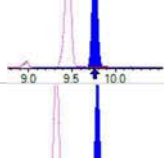
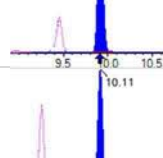
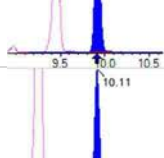
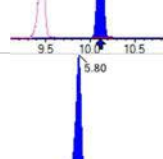
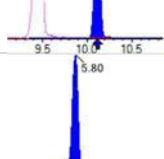
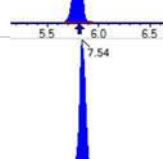
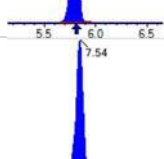
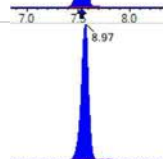
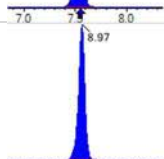
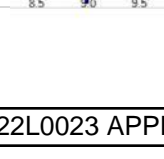
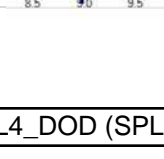
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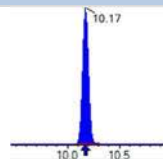
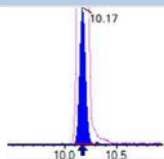
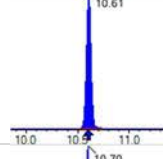
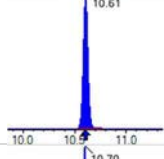
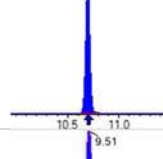
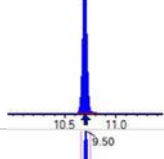
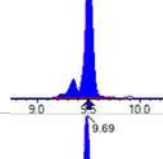
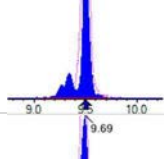
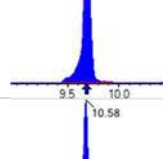
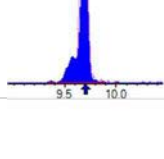
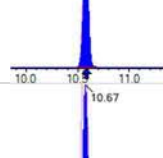
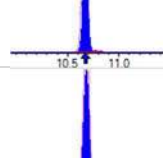
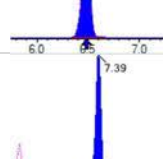
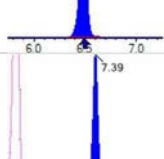
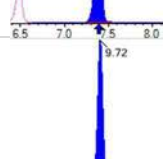
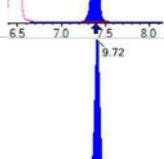
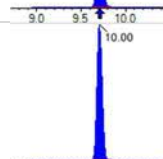
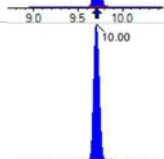
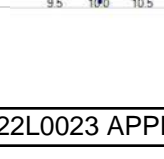
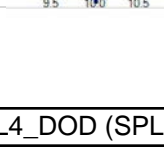
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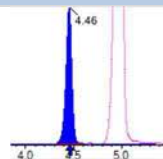
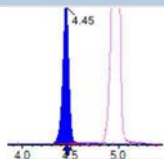
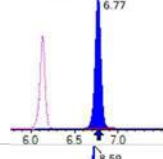
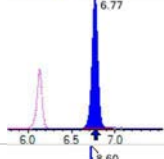
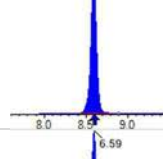
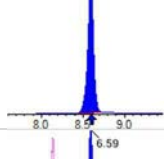
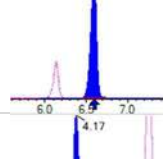
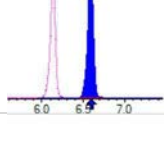
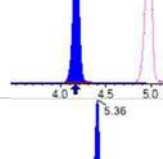
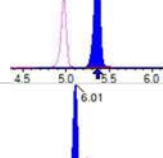
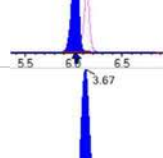
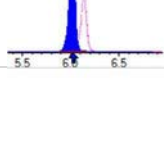
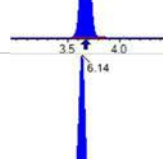
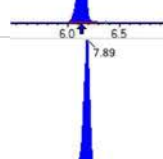
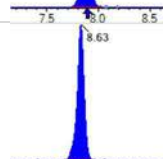

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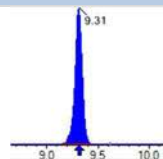
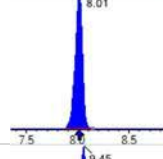
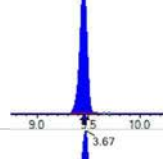
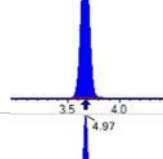
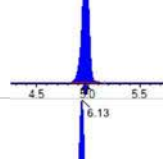
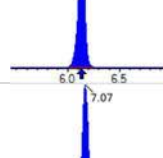
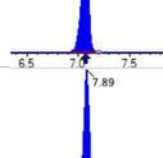
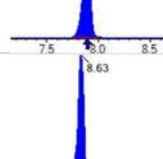
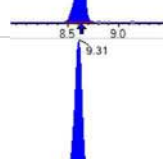
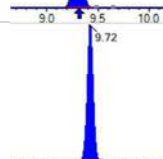

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV1	ADONA	9.45	8.72	92.3	ng/mL	+/- 30.00%
	PFEESA	8.90	8.69	97.6	ng/mL	+/- 30.00%
	PFMPA	10.0	10.4	104	ng/mL	+/- 30.00%
	PFMBA	10.0	9.66	96.6	ng/mL	+/- 30.00%
	NFDHA	10.0	10.5	105	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	8.93	95.5	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.94	105	ng/mL	+/- 30.00%
	3:3FTCA	20.0	20.0	100	ng/mL	+/- 30.00%
	5:3FTCA	20.0	21.0	105	ng/mL	+/- 30.00%
	7:3FTCA	20.0	20.9	105	ng/mL	+/- 30.00%

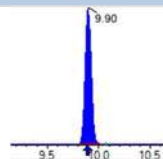
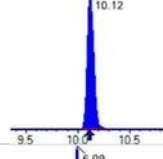
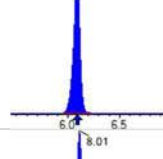
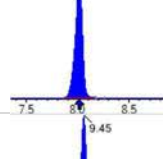
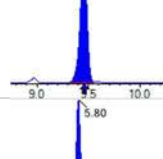
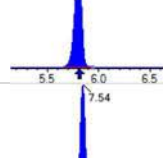
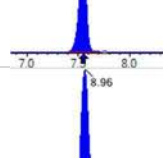
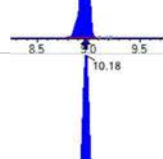
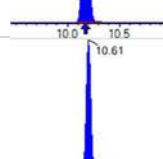
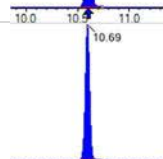

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 2174476	(3.67, 1.00) (0.00, N/A, 0.0)	66.4	N/A 0.0 0.0	21.2960 [20.0000]	106.5%			
PFPeA	(262.9 / 219.0) 1421038 (262.9 / 69.0) 16479	(4.97, 1.00) (0.00, N/A, -0.2)	769.7 307.4	0.0116 103.6 100.0	9.7578 [10.0000]	97.6%			
PFHxA	(313.0 / 269.0) 1155377 (313.0 / 119.0) 107117	(6.13, 1.00) (0.00, N/A, 0.1)	732.4 463.6	0.0927 94.8 100.0	5.0999 [5.0000]	102.0%			
PFHpA	(363.0 / 319.0) 1075352 (363.0 / 169.0) 335324	(7.07, 1.00) (0.00, N/A, 0.2)	619.6 576.6	0.3118 100.1 100.0	5.0724 [5.0000]	101.4%			
PFOA	(413.0 / 369.0) 1131251 (413.0 / 169.0) 372156	(7.88, 1.00) (0.00, N/A, -0.1)	619.2 786.0	0.3290 100.7 100.0	4.5014 [5.0000]	90.0%			
PFNA	(463.0 / 419.0) 822179 (463.0 / 169.0) 188690	(8.63, 1.00) (0.00, N/A, 0.1)	484.5 83.3	0.2295 119.1 100.0	5.2258 [5.0000]	104.5%			
PFDA	(513.0 / 469.0) 1177171 (513.0 / 169.0) 127064	(9.31, 1.00) (0.00, N/A, -0.1)	406.9 196.9	0.1079 112.9 100.0	4.9374 [5.0000]	98.7%			
PFUnA	(563.0 / 519.0) 1365730 (563.0 / 169.0) 139955	(9.72, 1.00) (0.00, N/A, 0.1)	556.0 499.7	0.1025 118.0 100.0	5.3704 [5.0000]	107.4%			
PFDoA	(613.0 / 569.0) 1642828 (613.0 / 169.0) 192706	(9.90, 1.00) (0.00, N/A, -0.1)	939.2 381.1	0.1173 84.3 100.0	5.1630 [5.0000]	103.3%			
PFTrDA	(663.0 / 619.0) 1381698 (663.0 / 169.0) 294912	(10.02, 1.01) (N/A, 0.00, 0.2)	921.5 438.8	0.2134 104.3 100.0	5.0120 [5.0000]	100.2%			
PFTeDA	(713.0 / 669.0) 1182445 (713.0 / 169.0) 207970	(10.12, 1.00) (0.00, N/A, -0.2)	920.8 324.1	0.1759 86.5 100.0	4.8261 [5.0000]	96.5%			

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) 1824397 (298.9 / 99.0) 1139616	(6.09, 1.00) (0.00, N/A, 0.0)	893.9 772.5	0.6247 101.5 100.0	4.7334 [4.4237]	107.0%			
PFPeS	(349.0 / 80.0) 3142368 (349.0 / 99.0) 1077724	(7.13, 0.89) (N/A, 0.00, 0.1)	637.6 758.7	0.3430 96.3 100.0	5.0812 [4.6919]	108.3%			
PFHxS	(399.0 / 80.0) 2572646 (399.0 / 99.0) 873924	(8.01, 1.00) (0.00, N/A, 0.0)	3488.4 15248.1	0.3397 101.1 100.0	4.7835 [4.5549]	105.0%			
PFHpS	(449.0 / 80.0) 2348191 (449.0 / 99.0) 652896	(8.78, 0.93) (N/A, 0.00, 0.1)	673.6 485.2	0.2780 101.6 100.0	5.0617 [4.7570]	106.4%			
PFOS	(499.0 / 80.0) 2739054 (499.0 / 99.0) 588080	(9.45, 1.00) (0.00, N/A, 0.0)	1078.5 128.0	0.2147 88.3 100.0	4.7463 [4.6375]	102.3%			
PFNS	(549.0 / 80.0) 3257558 (549.0 / 99.0) 813252	(9.77, 1.03) (N/A, 0.00, 0.3)	640.2 641.1	0.2497 102.3 100.0	5.0885 [4.7994]	106.0%			
PFDS	(599.0 / 80.0) 3939581 (599.0 / 99.0) 817304	(9.91, 1.05) (N/A, 0.00, 0.0)	1071.8 715.2	0.2075 92.2 100.0	5.5432 [4.8155]	115.1%			
PFDoS	(698.9 / 80.0) 1373285 (698.9 / 99.0) 340150	(10.11, 1.07) (N/A, 0.00, 0.2)	916.3 724.3	0.2477 101.2 100.0	4.6232 [4.8478]	95.4%			
4:2FTS	(327.0 / 307.0) 3294092 (327.0 / 81.0) 1699485	(5.80, 1.00) (0.00, N/A, 0.3)	772.7 625.3	0.5159 104.4 100.0	17.6821 [18.6906]	94.6%			
6:2FTS	(427.0 / 407.0) 2198841 (427.0 / 81.0) 1423593	(7.54, 1.00) (0.00, N/A, -0.2)	790.2 844.0	0.6474 83.2 100.0	19.8599 [18.9808]	104.6%			
8:2FTS	(527.0 / 507.0) 1659747 (527.0 / 81.0) 1333035	(8.97, 1.00) (0.00, N/A, 0.0)	433.2 579.9	0.8032 141.9 100.0	18.6047 [19.1658]	97.1%			

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
PFOSA	(498.0 / 78.0) 3757008 (498.0 / 478.0) 88096	(10.17, 1.00) (0.00, N/A, 0.0)	966.7 391.4	0.0234 112.5 100.0	5.6144 [5.0000]	112.3%			
NMeFOSA	(511.9 / 219.0) 2718517 (511.9 / 169.0) 1754469	(10.61, 1.00) (0.00, N/A, 0.1)	927.3 879.5	0.6454 89.6 100.0	19.6775 [20.0000]	98.4%			
NEIFOSA	(526.0 / 219.0) 3181045 (526.0 / 169.0) 3237653	(10.70, 1.00) (0.00, N/A, 0.0)	1649.6 1083.0	1.0178 96.2 100.0	23.3868 [20.0000]	116.9%			
NMeFOSAA	(570.0 / 419.0) 566827 (570.0 / 483.0) 273365	(9.51, 1.00) (0.00, N/A, 0.2)	401.3 402.1	0.4823 78.5 100.0	5.0086 [5.0000]	100.2%			
NEIFOSAA	(584.0 / 419.0) 469839 (584.0 / 526.0) 293059	(9.69, 1.00) (0.00, N/A, -0.2)	753.8 4474894.1	0.6237 85.1 100.0	4.6338 [5.0000]	92.7%			
NMeFOSE	(616.1 / 59.0) 584251	(10.58, 1.00) (0.01, N/A, 0.0)	1087.4	N/A 0.0 0.0	19.7387 [20.0000]	98.7%			
NEtFOSE	(630.0 / 59.0) 95675	(10.67, 1.00) (0.01, N/A, 0.0)	1067.8	N/A 0.0 0.0	17.0764 [20.0000]	85.4%			
HFPO-DA	(285.0 / 169.0) 891449 (285.0 / 185.0) 2553589	(6.48, 1.00) (0.00, N/A, 0.0)	931.6 831.9	2.8645 104.4 100.0	9.6538 [10.0000]	96.5%			
ADONA	(377.0 / 85.0) 3576160 (377.0 / 251.0) 495225	(7.39, 1.14) (N/A, 0.00, 0.0)	786.9 709.3	0.1385 111.2 100.0	8.7192 [9.4270]	92.5%			
9CI-Pf3ONS	(531.0 / 351.0) 9962731 (533.0 / 353.0) 3107279	(9.72, 1.50) (N/A, 0.00, 0.0)	754.9 645.0	0.3119 105.4 100.0	8.9314 [9.3325]	95.7%			
11CI-PF3OUDS	(631.0 / 451.0) 5699783 (633.0 / 453.0) 1604004	(10.00, 1.54) (N/A, 0.00, 0.0)	956.5 941.5	0.2814 85.1 100.0	9.9428 [9.4321]	105.4%			

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) 100595 (241.0 / 117.0) 173210	(4.46, 0.90) (N/A, 0.00, 0.1)	815.2 529.5	1.7219 102.9 100.0	20.0147 [20.0000]	100.1%			
5:3FTCA	(341.0 / 236.7) 841775 (341.0 / 217.0) 1303653	(6.77, 1.10) (N/A, 0.00, 0.1)	549.8 534.2	1.5487 105.8 100.0	21.0284 [20.0000]	105.1%			
7:3FTCA	(441.0 / 317.0) 962716 (441.0 / 337.0) 780016	(8.59, 1.40) (N/A, 0.00, -0.1)	525.4 478.6	0.8102 96.7 100.0	20.9013 [20.0000]	104.5%			
PFEESA	(315.0 / 135.0) 2154534 (315.0 / 83.0) 641642	(6.59, 1.07) (N/A, 0.00, 0.2)	688.1 821.7	0.2978 97.0 100.0	8.6866 [8.9246]	97.3%			
PFMPA	(229.0 / 85.0) 414964	(4.17, 0.84) (N/A, 0.00, 0.0)	960.5	N/A 0.0 0.0	10.3821 [10.0000]	103.8%			
PFMBA	(279.0 / 85.0) 1334725	(5.36, 1.08) (N/A, 0.00, 0.0)	849.7	N/A 0.0 0.0	9.6612 [10.0000]	96.6%			
NFDHA	(295.0 / 201.0) 1199591 (295.0 / 85.0) 1116467	(6.01, 0.98) (N/A, 0.00, -0.1)	719.2 1027.9	0.9307 105.4 100.0	10.5013 [10.0000]	105.0%			
13C3_PFBA_IIS	(216.0 / 172.0) 163023	(3.67, N/A) (N/A, 0.00, N/A)	831.5	N/A	1.1712 [1.0000]	117.1% { 100.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 223496	(6.14, N/A) (N/A, 0.00, N/A)	655.8	N/A	0.9679 [1.0000]	96.8% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 243666	(7.89, N/A) (N/A, 0.00, N/A)	562.9	N/A	1.1083 [1.0000]	110.8% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 180309	(8.63, N/A) (N/A, 0.00, N/A)	459.4	N/A	0.9737 [1.0000]	97.4% { 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
13C2_PFDA_IIS	(515.1 / 470.1) 199943	(9.31, N/A) (N/A, 0.00, N/A)	441.0	N/A	1.0819 [1.0000]	108.2% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 413657	(8.01, N/A) (N/A, 0.00, N/A)	842.9	N/A	1.0246 [1.0000]	102.5% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 337597	(9.45, N/A) (N/A, 0.00, N/A)	493.3	N/A	1.0577 [1.0000]	105.8% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1252106	(3.67, N/A) (N/A, 0.00, N/A)	952.6	N/A	7.4625 [8.0000]	93.3% { 100.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 663275	(4.97, N/A) (N/A, 0.00, N/A)	844.7	N/A	4.2653 [4.0000]	106.6% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 527577	(6.13, N/A) (N/A, 0.00, N/A)	712.5	N/A	2.0513 [2.0000]	102.6% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 465157	(7.07, N/A) (N/A, 0.00, N/A)	508.0	N/A	2.0732 [2.0000]	103.7% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 511118	(7.89, N/A) (N/A, 0.00, N/A)	831.0	N/A	1.9127 [2.0000]	95.6% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 183353	(8.63, N/A) (N/A, 0.00, N/A)	403.2	N/A	0.9248 [1.0000]	92.5% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 250483	(9.31, N/A) (N/A, 0.00, N/A)	434.8	N/A	0.8808 [1.0000]	88.1% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 321796	(9.72, N/A) (N/A, 0.00, N/A)	405.6	N/A	0.7956 [1.0000]	79.6% { 100.0% }			

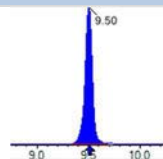
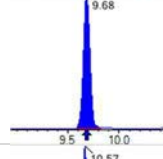
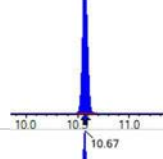
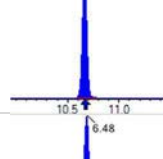
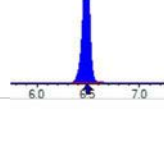
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 369097	(9.90, N/A) (N/A, 0.00, N/A)	437.6	N/A	0.9142 [1.0000]	91.4% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 276447	(10.12, N/A) (N/A, 0.00, N/A)	597.1	N/A	1.0311 [1.0000]	103.1% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1406036	(6.09, N/A) (N/A, 0.00, N/A)	764.6	N/A	2.0104 [2.0000]	100.5% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 692357	(8.01, N/A) (N/A, 0.00, N/A)	740.3	N/A	1.8606 [2.0000]	93.0% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1063346	(9.45, N/A) (N/A, 0.00, N/A)	269.2	N/A	1.8352 [2.0000]	91.8% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 225369	(5.80, N/A) (N/A, 0.00, N/A)	577.6	N/A	3.8045 [4.0000]	95.1% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 288039	(7.54, N/A) (N/A, 0.00, N/A)	698.3	N/A	4.0387 [4.0000]	101.0% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 225236	(8.96, N/A) (N/A, 0.00, N/A)	409.3	N/A	3.1548 [4.0000]	78.9% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1416106	(10.18, N/A) (N/A, 0.00, N/A)	844.7	N/A	1.9335 [2.0000]	96.7% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 338962	(10.61, N/A) (N/A, 0.00, N/A)	786.7	N/A	2.1197 [2.0000]	106.0% { 100.0% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 301588	(10.69, N/A) (N/A, 0.00, N/A)	831.9	N/A	2.0430 [2.0000]	102.2% { 100.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (3)
 Acquired: 2022/12/21 - 17:11

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) 580901	(9.50, N/A) (N/A, 0.00, N/A)	387.0	N/A	4.2162 [4.0000]	105.4% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 451752	(9.68, N/A) (N/A, 0.00, N/A)	396.3	N/A	3.7200 [4.0000]	93.0% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 469009	(10.57, N/A) (N/A, 0.00, N/A)	970.8	N/A	20.8883 [20.0000]	104.4% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 218847	(10.67, N/A) (N/A, 0.00, N/A)	1095.4	N/A	21.4097 [20.0000]	107.0% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1215395	(6.48, N/A) (N/A, 0.00, N/A)	894.4	N/A	8.8882 [8.0000]	111.1% { 100.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633 SPLP

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

Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2252011
 Sequence: SB03942

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV2	PFBA	20.0	20.0	100	ng/mL	+/- 30.00%
	PFPEA	10.0	9.74	97.4	ng/mL	+/- 30.00%
	PFHXA	5.00	5.63	113	ng/mL	+/- 30.00%
	PFHPA	5.00	5.47	109	ng/mL	+/- 30.00%
	PFOA	5.00	4.56	91.2	ng/mL	+/- 30.00%
	PFNA	5.00	5.24	105	ng/mL	+/- 30.00%
	PFDA	5.00	4.81	96.1	ng/mL	+/- 30.00%
	PFUnA	5.00	5.43	109	ng/mL	+/- 30.00%
	PFDOA	5.00	4.52	90.4	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.45	109	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.76	95.3	ng/mL	+/- 30.00%
	PFBS	4.42	4.43	100	ng/mL	+/- 30.00%
	PFPEs	4.70	4.68	99.6	ng/mL	+/- 30.00%
	PFHXS	4.58	4.33	94.6	ng/mL	+/- 30.00%
	PFHPS	4.78	4.89	102	ng/mL	+/- 30.00%
	PFOS	4.65	4.65	100	ng/mL	+/- 30.00%
	PFNS	4.80	4.74	98.7	ng/mL	+/- 30.00%
	PFDS	4.82	5.20	108	ng/mL	+/- 30.00%
	PFDOS	4.85	5.33	110	ng/mL	+/- 30.00%
	4:2FTS	18.8	16.8	89.5	ng/mL	+/- 30.00%
	6:2FTS	19.0	14.0	73.9	ng/mL	+/- 30.00%
	8:2FTS	19.2	16.7	86.7	ng/mL	+/- 30.00%
	PFOSA	5.00	4.62	92.4	ng/mL	+/- 30.00%
	NMeFOSA	20.0	21.3	107	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.3	107	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.20	104	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.18	104	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.8	99.0	ng/mL	+/- 30.00%
	NEtFOSE	20.0	16.6	83.1	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.1	101	ng/mL	+/- 30.00%

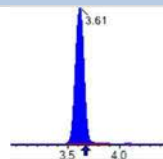
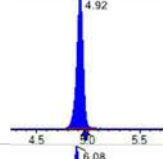
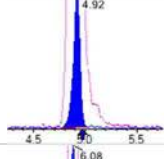
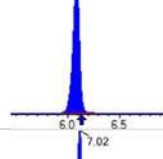
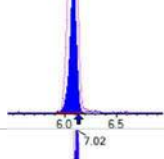
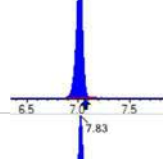
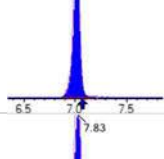
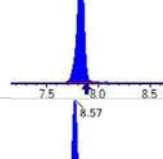
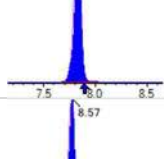
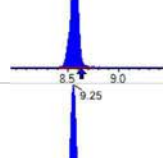
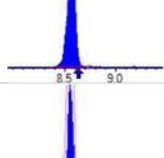
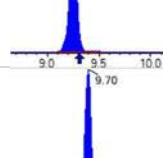
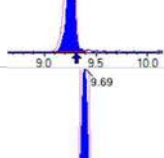
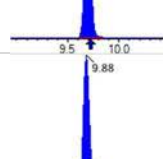
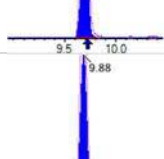
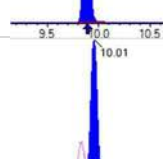
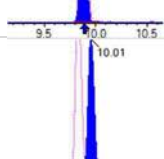
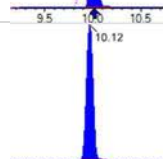
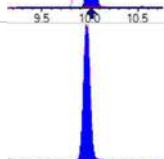
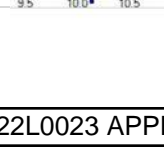
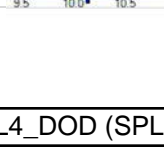
INITIAL AND CONTINUING CALIBRATION CHECK

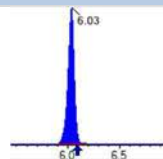
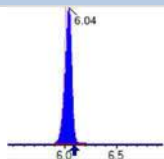
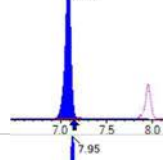
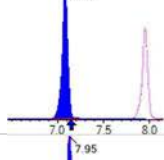
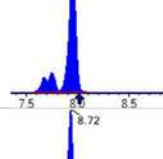
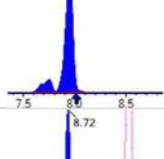
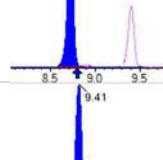
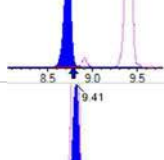
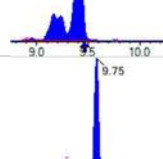
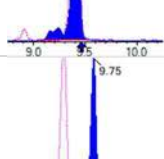
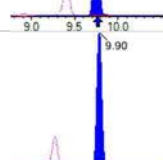
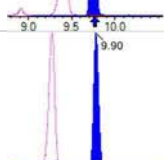
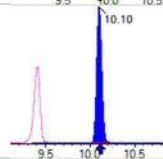
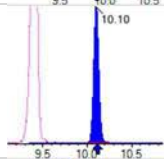
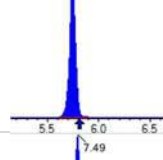
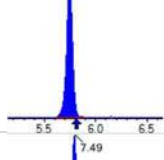
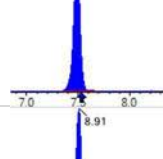
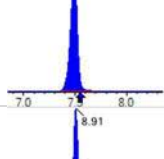
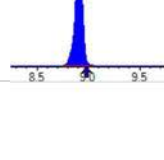
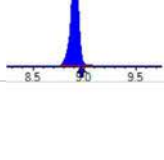
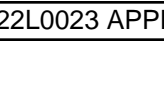
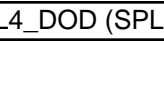
EPA 1633 SPLP

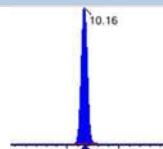
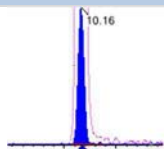
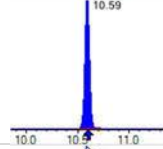
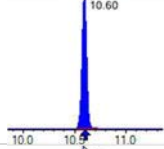
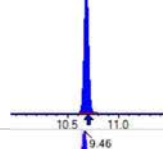
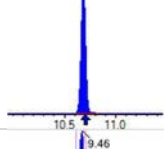
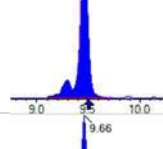
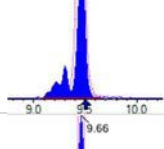
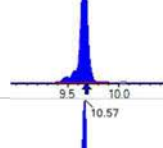
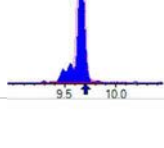
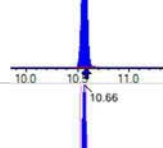
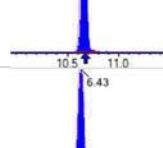
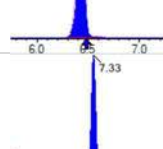
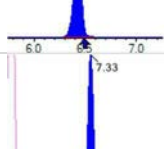
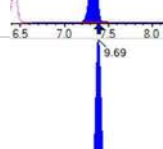
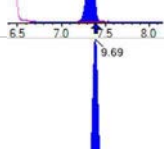
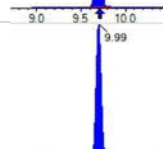
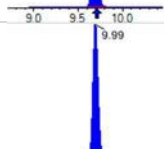

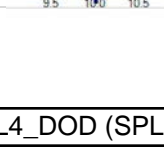
Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0304

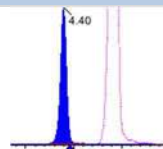
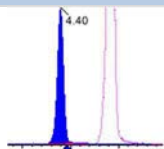
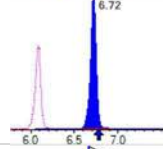
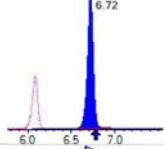
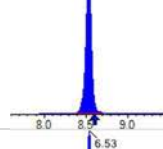
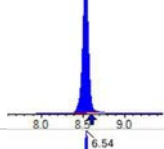
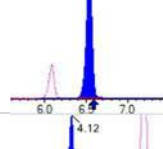
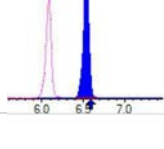
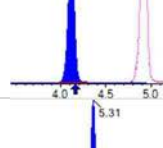
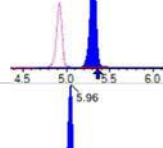
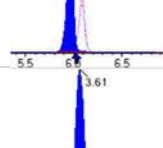
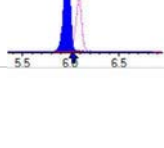
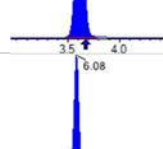
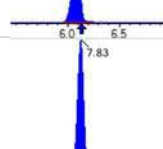
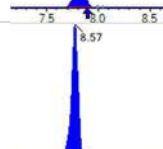

Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2252011
 Sequence: SB03942

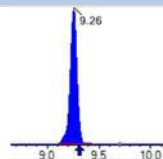
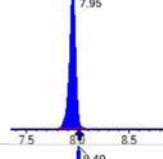
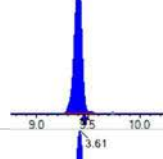
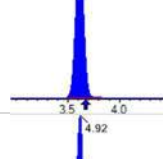
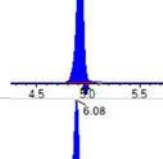
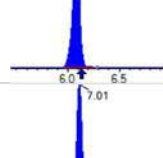
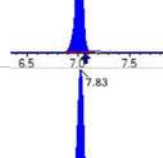
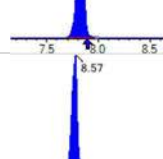
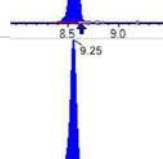
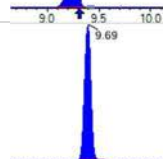

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV2	ADONA	9.45	10.0	106	ng/mL	+/- 30.00%
	PFEESA	8.90	9.25	104	ng/mL	+/- 30.00%
	PFMPA	10.0	10.1	101	ng/mL	+/- 30.00%
	PFMBA	10.0	9.55	95.5	ng/mL	+/- 30.00%
	NFDHA	10.0	11.5	115	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	8.72	93.2	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.92	105	ng/mL	+/- 30.00%
	3:3FTCA	20.0	20.2	101	ng/mL	+/- 30.00%
	5:3FTCA	20.0	22.2	111	ng/mL	+/- 30.00%
	7:3FTCA	20.0	22.4	112	ng/mL	+/- 30.00%

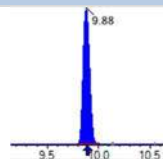
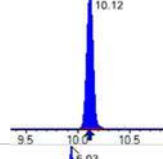
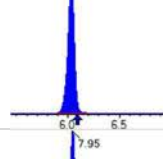
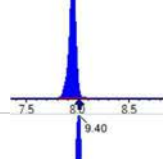
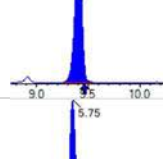
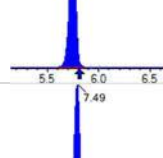
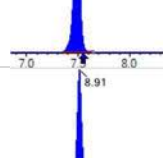
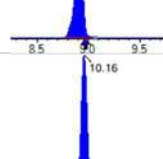
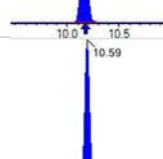
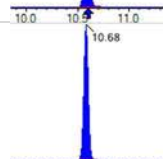

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 2017426	(3.61, 1.00) (0.00, N/A, 0.0)	69.3	N/A 0.0 0.0	20.0459 [20.0000]	100.2%			
PFPeA	(262.9 / 219.0) 1426081 (262.9 / 69.0) 16916	(4.92, 1.00) (0.00, N/A, 0.0)	722.8 232.9	0.0119 106.0 102.3	9.7400 [10.0000]	97.4%			
PFHxA	(313.0 / 269.0) 1144606 (313.0 / 119.0) 114469	(6.08, 1.00) (0.00, N/A, 0.1)	466.0 402.5	0.1000 102.3 107.9	5.6298 [5.0000]	112.6%			
PFHpA	(363.0 / 319.0) 1120334 (363.0 / 169.0) 331709	(7.02, 1.00) (0.00, N/A, -0.1)	606.5 634.3	0.2961 95.1 95.0	5.4687 [5.0000]	109.4%			
PFOA	(413.0 / 369.0) 1093832 (413.0 / 169.0) 349631	(7.83, 1.00) (0.00, N/A, -0.1)	637.8 677.2	0.3196 97.8 97.2	4.5607 [5.0000]	91.2%			
PFNA	(463.0 / 419.0) 846774 (463.0 / 169.0) 172322	(8.57, 1.00) (0.00, N/A, -0.1)	546.4 107.7	0.2035 105.6 88.7	5.2440 [5.0000]	104.9%			
PFDA	(513.0 / 469.0) 1220682 (513.0 / 169.0) 112804	(9.25, 1.00) (0.00, N/A, 0.0)	457.4 287.0	0.0924 96.7 85.6	4.8057 [5.0000]	96.1%			
PFUnA	(563.0 / 519.0) 1470388 (563.0 / 169.0) 125268	(9.70, 1.00) (0.00, N/A, 0.3)	676.8 322.1	0.0852 98.1 83.1	5.4346 [5.0000]	108.7%			
PFDoA	(613.0 / 569.0) 1446202 (613.0 / 169.0) 223485	(9.88, 1.00) (0.00, N/A, -0.2)	812.5 546.7	0.1545 111.0 131.7	4.5204 [5.0000]	90.4%			
PFTrDA	(663.0 / 619.0) 1509502 (663.0 / 169.0) 294380	(10.01, 1.01) (N/A, -0.01, -0.1)	1057.7 533.9	0.1950 95.3 91.4	5.4458 [5.0000]	108.9%			
PFTeDA	(713.0 / 669.0) 1060074 (713.0 / 169.0) 224910	(10.12, 1.00) (0.00, N/A, 0.0)	666.3 519.4	0.2122 104.3 120.6	4.7629 [5.0000]	95.3%			

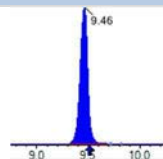
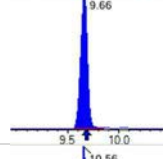
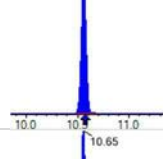
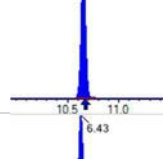
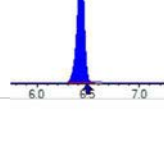
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 1711618 (298.9 / 99.0) 1049906	(6.03, 1.00) (0.00, N/A, -0.2)	743.7 554.1	0.6134 99.7 98.2	4.4310 [4.4237]	100.2%			
PFPeS	(349.0 / 80.0) 3145322 (349.0 / 99.0) 1105369	(7.08, 0.89) (N/A, -0.05, 0.0)	742.7 647.2	0.3514 98.7 102.5	4.6811 [4.6919]	99.8%			
PFHxS	(399.0 / 80.0) 2532441 (399.0 / 99.0) 868340	(7.95, 1.00) (0.00, N/A, 0.1)	2159.7 4129.2	0.3429 102.0 100.9	4.3338 [4.5549]	95.1%			
PFHpS	(449.0 / 80.0) 2308503 (449.0 / 99.0) 644897	(8.72, 0.93) (N/A, -0.06, 0.0)	726.5 606.0	0.2794 102.1 100.5	4.8906 [4.7570]	102.8%			
PFOS	(499.0 / 80.0) 2731592 (499.0 / 99.0) 597975	(9.41, 1.00) (0.00, N/A, -0.1)	562.3 106.4	0.2189 90.0 102.0	4.6519 [4.6375]	100.3%			
PFNS	(549.0 / 80.0) 3086171 (549.0 / 99.0) 772017	(9.75, 1.04) (N/A, -0.02, -0.1)	913.7 671.6	0.2502 102.5 100.2	4.7379 [4.7994]	98.7%			
PFDS	(599.0 / 80.0) 3761826 (599.0 / 99.0) 858464	(9.90, 1.05) (N/A, -0.01, 0.1)	674.6 875.7	0.2282 101.4 110.0	5.2021 [4.8155]	108.0%			
PFDoS	(698.9 / 80.0) 1611184 (698.9 / 99.0) 345131	(10.10, 1.07) (N/A, -0.01, 0.0)	909.4 914.1	0.2142 87.6 86.5	5.3308 [4.8478]	110.0%			
4:2FTS	(327.0 / 307.0) 3253889 (327.0 / 81.0) 2008258	(5.75, 1.00) (0.00, N/A, 0.0)	763.6 819.0	0.6172 124.9 119.6	16.8323 [18.6906]	90.1%			
6:2FTS	(427.0 / 407.0) 1738654 (427.0 / 81.0) 1399319	(7.49, 1.00) (0.00, N/A, 0.0)	737.3 736.5	0.8048 103.4 124.3	14.0459 [18.9808]	74.0%			
8:2FTS	(527.0 / 507.0) 1800269 (527.0 / 81.0) 1147665	(8.91, 1.00) (-0.01, N/A, 0.0)	472.9 635.4	0.6375 112.6 79.4	16.6517 [19.1658]	86.9%			

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) 3295389 (498.0 / 478.0) 77127	(10.16 , 1.00) (0.00 , N/A , 0.1)	847.4 453.1	0.0234 112.3 99.8	4.6202 [5.0000]	92.4%			
NMeFOSA	(511.9 / 219.0) 2816208 (511.9 / 169.0) 1862577	(10.59 , 1.00) (0.00 , N/A , -0.1)	1064.3 1170.9	0.6614 91.8 102.5	21.3302 [20.0000]	106.7%			
NEIFOSA	(526.0 / 219.0) 2932044 (526.0 / 169.0) 2972822	(10.68 , 1.00) (0.00 , N/A , 0.0)	1105.0 1160.1	1.0139 95.9 99.6	21.3340 [20.0000]	106.7%			
NMeFOSAA	(570.0 / 419.0) 518953 (570.0 / 483.0) 243963	(9.46 , 1.00) (0.00 , N/A , -0.1)	373.5 313.1	0.4701 76.5 97.5	5.1966 [5.0000]	103.9%			
NEIFOSAA	(584.0 / 419.0) 487971 (584.0 / 526.0) 310756	(9.66 , 1.00) (0.00 , N/A , -0.1)	642.0 1559.6	0.6368 86.9 102.1	5.1844 [5.0000]	103.7%			
NMeFOSE	(616.1 / 59.0) 606096	(10.57 , 1.00) (0.01 , N/A , 0.0)	1258.4	N/A 0.0 0.0	19.7982 [20.0000]	99.0%			
NEtFOSE	(630.0 / 59.0) 85912	(10.66 , 1.00) (0.01 , N/A , 0.0)	791.9	N/A 0.0 0.0	16.6257 [20.0000]	83.1%			
HFPO-DA	(285.0 / 169.0) 878148 (285.0 / 185.0) 2511539	(6.43 , 1.00) (0.00 , N/A , 0.1)	722.2 853.5	2.8600 104.2 99.8	10.0580 [10.0000]	100.6%			
ADONA	(377.0 / 85.0) 3884854 (377.0 / 251.0) 470526	(7.33 , 1.14) (N/A , -0.06 , -0.1)	897.1 707.4	0.1211 97.3 87.5	10.0178 [9.4270]	106.3%			
9CI-Pf3ONS	(531.0 / 351.0) 9200810 (533.0 / 353.0) 2912345	(9.69 , 1.51) (N/A , -0.02 , 0.1)	703.1 936.1	0.3165 107.0 101.5	8.7162 [9.3325]	93.4%			
11CI-PF3OUDS	(631.0 / 451.0) 5378921 (633.0 / 453.0) 1576898	(9.99 , 1.55) (N/A , -0.01 , 0.1)	890.4 823.4	0.2932 88.6 104.2	9.9240 [9.4321]	105.2%			

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
3:3FTCA	(241.0 / 177.0) 102261 (241.0 / 117.0) 164901	(4.40, 0.89) (N/A, -0.06, 0.0)	578.4 533.9	1.6125 96.4 93.7	20.2372 [20.0000]	101.2%			
5:3FTCA	(341.0 / 236.7) 798790 (341.0 / 217.0) 1279814	(6.72, 1.10) (N/A, -0.05, 0.0)	627.3 605.9	1.6022 109.5 103.5	22.2351 [20.0000]	111.2%			
7:3FTCA	(441.0 / 317.0) 926553 (441.0 / 337.0) 773270	(8.53, 1.40) (N/A, -0.06, 0.0)	453.9 413.2	0.8346 99.7 103.0	22.4152 [20.0000]	112.1%			
PFEESA	(315.0 / 135.0) 2058385 (315.0 / 83.0) 633661	(6.53, 1.07) (N/A, -0.06, -0.1)	776.5 809.8	0.3078 100.3 103.4	9.2474 [8.9246]	103.6%			
PFMPA	(229.0 / 85.0) 405513	(4.12, 0.84) (N/A, -0.05, 0.0)	896.8	N/A 0.0 0.0	10.0913 [10.0000]	100.9%			
PFMBA	(279.0 / 85.0) 1326009	(5.31, 1.08) (N/A, -0.05, 0.0)	796.8	N/A 0.0 0.0	9.5467 [10.0000]	95.5%			
NFDHA	(295.0 / 201.0) 1174312 (295.0 / 85.0) 1042492	(5.96, 0.98) (N/A, -0.05, 0.1)	552.9 1001.0	0.8877 100.6 95.4	11.4548 [10.0000]	114.5%			
13C3_PFBa_IIS	(216.0 / 172.0) 150873	(3.61, N/A) (N/A, -0.05, N/A)	628.6	N/A	1.0839 [1.0000]	108.4% { 92.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 233705	(6.08, N/A) (N/A, -0.05, N/A)	523.5	N/A	1.0121 [1.0000]	101.2% { 104.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 232379	(7.83, N/A) (N/A, -0.06, N/A)	800.8	N/A	1.0570 [1.0000]	105.7% { 95.4% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 171234	(8.57, N/A) (N/A, -0.06, N/A)	445.8	N/A	0.9247 [1.0000]	92.5% { 95.0% }			

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) 202021	(9.26, N/A) (N/A, -0.05, N/A)	339.3	N/A	1.0931 [1.0000]	109.3% { 101.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 444007	(7.95, N/A) (N/A, -0.06, N/A)	738.8	N/A	1.0998 [1.0000]	110.0% { 107.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 325821	(9.40, N/A) (N/A, -0.05, N/A)	513.5	N/A	1.0208 [1.0000]	102.1% { 96.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1234118	(3.61, N/A) (N/A, -0.05, N/A)	711.2	N/A	7.9476 [8.0000]	99.3% { 98.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 666844	(4.92, N/A) (N/A, -0.05, N/A)	766.0	N/A	4.1009 [4.0000]	102.5% { 100.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 473465	(6.08, N/A) (N/A, -0.05, N/A)	579.4	N/A	1.7605 [2.0000]	88.0% { 89.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 449491	(7.01, N/A) (N/A, -0.06, N/A)	473.8	N/A	1.9159 [2.0000]	95.8% { 96.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 487784	(7.83, N/A) (N/A, -0.06, N/A)	814.9	N/A	1.9141 [2.0000]	95.7% { 95.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 188185	(8.57, N/A) (N/A, -0.06, N/A)	326.4	N/A	0.9994 [1.0000]	99.9% { 102.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 266855	(9.25, N/A) (N/A, -0.06, N/A)	423.5	N/A	0.9288 [1.0000]	92.9% { 106.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 342361	(9.69, N/A) (N/A, -0.02, N/A)	727.9	N/A	0.8377 [1.0000]	83.8% { 106.4% }			

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) 371113	(9.88, N/A) (N/A, -0.02, N/A)	430.0	N/A	0.9098 [1.0000]	91.0% { 100.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 251129	(10.12, N/A) (N/A, 0.00, N/A)	544.0	N/A	0.9270 [1.0000]	92.7% { 90.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1409135	(6.03, N/A) (N/A, -0.05, N/A)	624.5	N/A	1.8771 [2.0000]	93.9% { 100.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 752242	(7.95, N/A) (N/A, -0.06, N/A)	938.0	N/A	1.8833 [2.0000]	94.2% { 108.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1081958	(9.40, N/A) (N/A, -0.05, N/A)	287.3	N/A	1.9349 [2.0000]	96.7% { 101.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 233857	(5.75, N/A) (N/A, -0.06, N/A)	790.2	N/A	3.6780 [4.0000]	91.9% { 103.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 322032	(7.49, N/A) (N/A, -0.05, N/A)	767.2	N/A	4.2067 [4.0000]	105.2% { 111.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 272960	(8.91, N/A) (N/A, -0.05, N/A)	368.3	N/A	3.5620 [4.0000]	89.0% { 121.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1509387	(10.16, N/A) (N/A, -0.02, N/A)	697.1	N/A	2.1354 [2.0000]	106.8% { 106.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 323936	(10.59, N/A) (N/A, -0.01, N/A)	952.0	N/A	2.0990 [2.0000]	104.9% { 95.6% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 304728	(10.68, N/A) (N/A, -0.01, N/A)	1027.3	N/A	2.1389 [2.0000]	106.9% { 101.0% }			

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) 512601	(9.46, N/A) (N/A, -0.04, N/A)	418.5	N/A	3.8550 [4.0000]	96.4% { 88.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 419361	(9.66, N/A) (N/A, -0.02, N/A)	391.0	N/A	3.5781 [4.0000]	89.5% { 92.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 485083	(10.56, N/A) (N/A, -0.01, N/A)	1206.1	N/A	22.3851 [20.0000]	111.9% { 103.4% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 201843	(10.65, N/A) (N/A, -0.01, N/A)	1636.9	N/A	20.4599 [20.0000]	102.3% { 92.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1149151	(6.43, N/A) (N/A, -0.05, N/A)	556.2	N/A	8.0366 [8.0000]	100.5% { 94.5% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633 SPLP

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

Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2252011
 Sequence: SB03942

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV3	PFBA	20.0	20.9	104	ng/mL	+/- 30.00%
	PFPEA	10.0	9.59	95.9	ng/mL	+/- 30.00%
	PFHXA	5.00	5.05	101	ng/mL	+/- 30.00%
	PFHPA	5.00	5.17	103	ng/mL	+/- 30.00%
	PFOA	5.00	4.69	93.8	ng/mL	+/- 30.00%
	PFNA	5.00	5.23	105	ng/mL	+/- 30.00%
	PFDA	5.00	4.94	98.8	ng/mL	+/- 30.00%
	PFUnA	5.00	5.17	103	ng/mL	+/- 30.00%
	PFDOA	5.00	5.12	102	ng/mL	+/- 30.00%
	PFTRDA	5.00	6.00	120	ng/mL	+/- 30.00%
	PFTEDA	5.00	5.07	101	ng/mL	+/- 30.00%
	PFBS	4.42	4.62	104	ng/mL	+/- 30.00%
	PFPEs	4.70	4.99	106	ng/mL	+/- 30.00%
	PFHXS	4.58	4.60	101	ng/mL	+/- 30.00%
	PFHPS	4.78	4.60	96.3	ng/mL	+/- 30.00%
	PFOS	4.65	4.63	99.5	ng/mL	+/- 30.00%
	PFNS	4.80	4.52	94.1	ng/mL	+/- 30.00%
	PFDS	4.82	4.76	98.8	ng/mL	+/- 30.00%
	PFDOS	4.85	4.69	96.7	ng/mL	+/- 30.00%
	4:2FTS	18.8	18.2	96.8	ng/mL	+/- 30.00%
	6:2FTS	19.0	20.3	107	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.6	102	ng/mL	+/- 30.00%
	PFOSA	5.00	4.72	94.5	ng/mL	+/- 30.00%
	NMeFOSA	20.0	20.9	104	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.4	107	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.11	102	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.34	86.7	ng/mL	+/- 30.00%
	NMeFOSE	20.0	21.8	109	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.9	94.7	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.57	95.7	ng/mL	+/- 30.00%

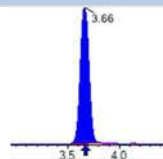
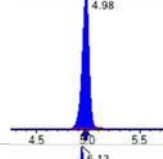
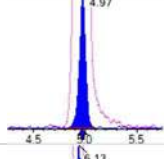
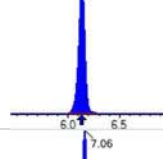
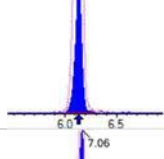
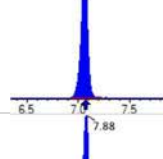
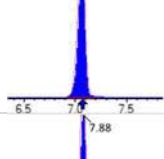
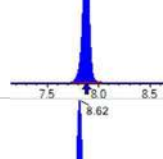
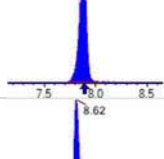
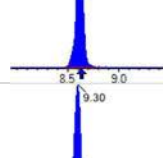
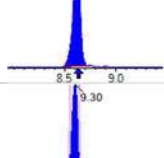
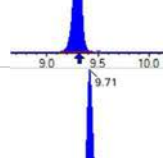
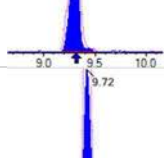
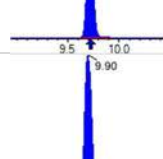
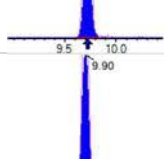
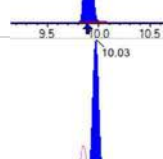
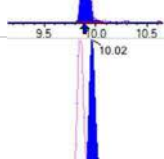
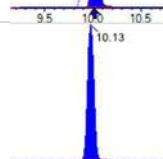
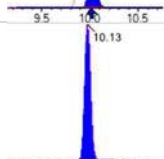

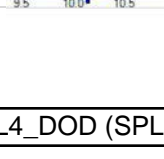
INITIAL AND CONTINUING CALIBRATION CHECK

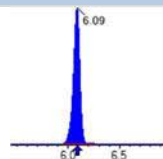
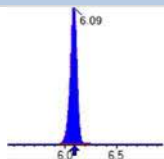
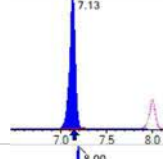
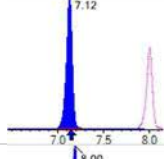
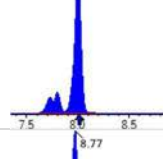
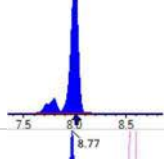
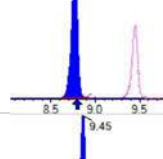
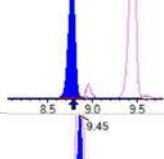
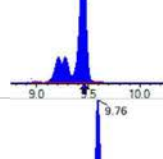
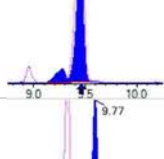
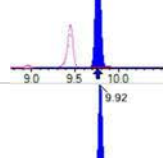
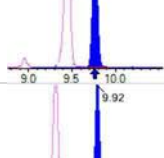
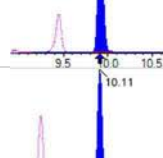
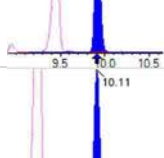
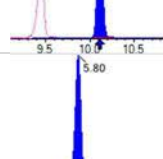
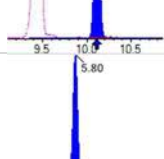
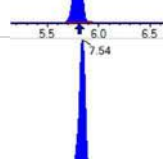
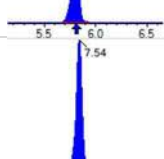
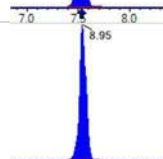
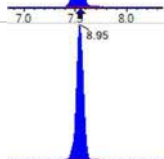
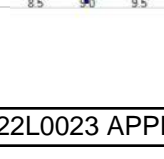
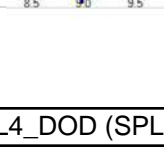
EPA 1633 SPLP

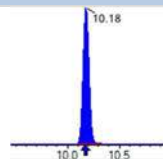
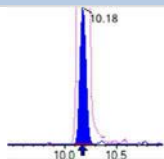
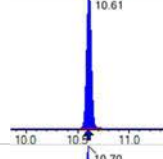
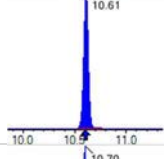
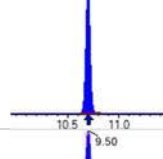
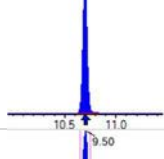
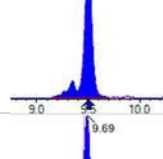
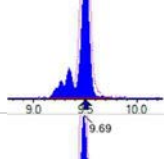
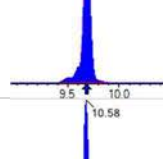
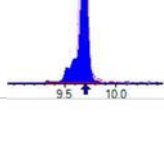
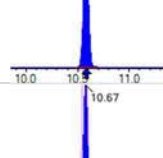
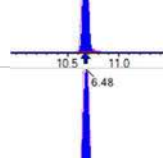
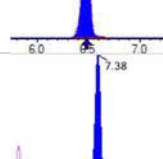
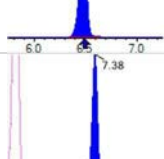
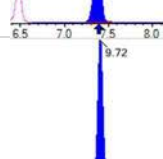
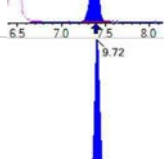
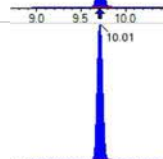
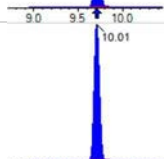
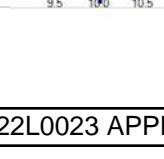
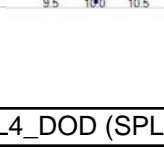
Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0304

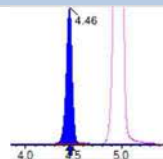
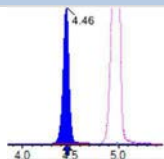
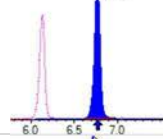
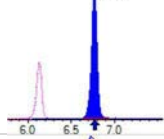
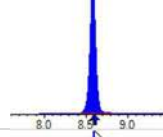
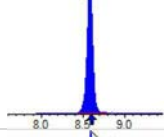
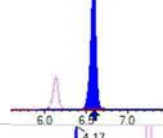
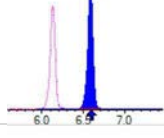
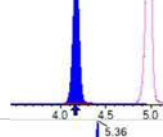
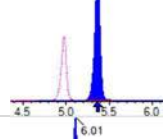
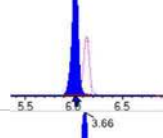
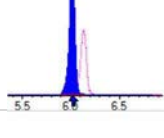
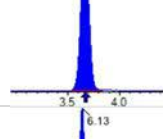
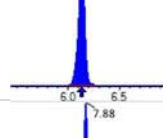
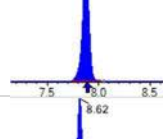
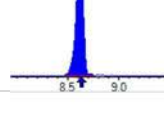
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 Sequence: SB03942

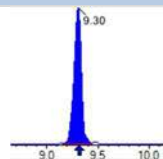
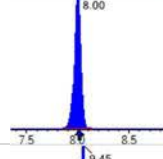
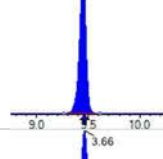
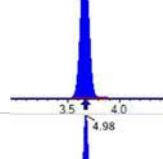
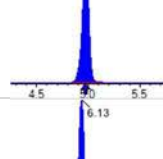
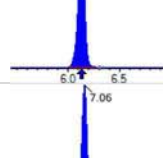
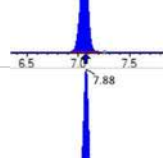
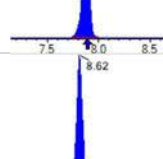
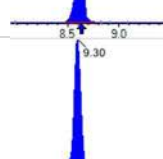
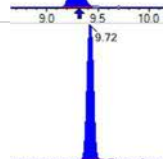

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV3	ADONA	9.45	9.33	98.7	ng/mL	+/- 30.00%
	PFEESA	8.90	8.89	99.9	ng/mL	+/- 30.00%
	PFMPA	10.0	10.1	101	ng/mL	+/- 30.00%
	PFMBA	10.0	10.1	101	ng/mL	+/- 30.00%
	NFDHA	10.0	10.2	102	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	8.80	94.1	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.93	105	ng/mL	+/- 30.00%
	3:3FTCA	20.0	20.6	103	ng/mL	+/- 30.00%
	5:3FTCA	20.0	19.0	95.0	ng/mL	+/- 30.00%
	7:3FTCA	20.0	19.2	96.2	ng/mL	+/- 30.00%

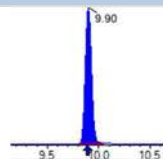
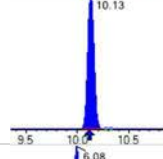
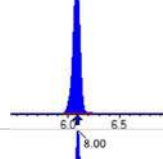
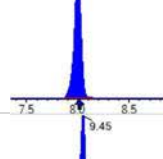
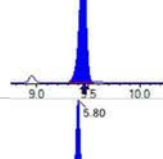
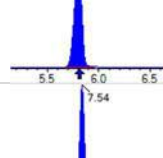
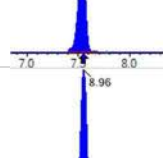
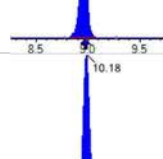
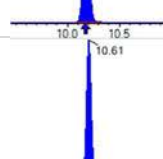
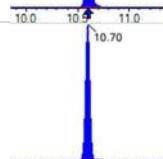

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 2024371	(3.66, 1.00) (0.00, N/A, 0.0)	69.0	N/A 0.0 0.0	20.8697 [20.0000]	104.3%			
PFPeA	(262.9 / 219.0) 1408714 (262.9 / 69.0) 16873	(4.98, 1.00) (0.00, N/A, 0.1)	664.6 351.2	0.0120 107.0 103.3	9.5910 [10.0000]	95.9%			
PFHxA	(313.0 / 269.0) 1187923 (313.0 / 119.0) 112819	(6.13, 1.00) (0.00, N/A, 0.1)	745.3 407.4	0.0950 97.1 102.4	5.0528 [5.0000]	101.1%			
PFHpA	(363.0 / 319.0) 1078927 (363.0 / 169.0) 303317	(7.06, 1.00) (0.00, N/A, -0.1)	500.9 704.0	0.2811 90.3 90.2	5.1659 [5.0000]	103.3%			
PFOA	(413.0 / 369.0) 1216771 (413.0 / 169.0) 380964	(7.88, 1.00) (0.00, N/A, -0.1)	724.5 745.4	0.3131 95.8 95.2	4.6880 [5.0000]	93.8%			
PFNA	(463.0 / 419.0) 897043 (463.0 / 169.0) 178918	(8.62, 1.00) (0.00, N/A, 0.0)	573.7 105.8	0.1995 103.5 86.9	5.2298 [5.0000]	104.6%			
PFDA	(513.0 / 469.0) 1154457 (513.0 / 169.0) 106550	(9.30, 1.00) (0.00, N/A, -0.1)	449.3 296.8	0.0923 96.6 85.5	4.9417 [5.0000]	98.8%			
PFUnA	(563.0 / 519.0) 1367164 (563.0 / 169.0) 137059	(9.71, 1.00) (0.00, N/A, -0.2)	685.2 385.3	0.1003 115.4 97.8	5.1726 [5.0000]	103.5%			
PFDoA	(613.0 / 569.0) 1602794 (613.0 / 169.0) 220504	(9.90, 1.00) (0.00, N/A, -0.2)	556.5 362.4	0.1376 98.8 117.3	5.1225 [5.0000]	102.5%			
PFTrDA	(663.0 / 619.0) 1625924 (663.0 / 169.0) 336854	(10.03, 1.01) (N/A, 0.01, 0.4)	860.6 619.0	0.2072 101.2 97.1	5.9977 [5.0000]	120.0%			
PFTeDA	(713.0 / 669.0) 1163954 (713.0 / 169.0) 215666	(10.13, 1.00) (0.00, N/A, 0.2)	855.5 470.4	0.1853 91.1 105.3	5.0748 [5.0000]	101.5%			

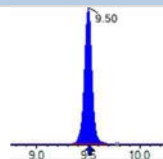
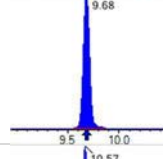
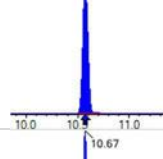
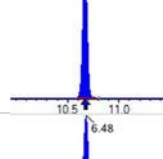
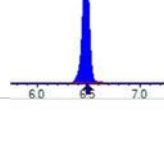
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 1723252 (298.9 / 99.0) 1138756	(6.09, 1.00) (0.00, N/A, 0.0)	522.0 605.4	0.6608 107.4 105.8	4.6174 [4.4237]	104.4%			
PFPeS	(349.0 / 80.0) 3144976 (349.0 / 99.0) 1156696	(7.13, 0.89) (N/A, -0.01, 0.1)	768.0 829.7	0.3678 103.3 107.2	4.9937 [4.6919]	106.4%			
PFHxS	(399.0 / 80.0) 2521385 (399.0 / 99.0) 834423	(8.00, 1.00) (0.00, N/A, 0.2)	3080.8 5757.6	0.3309 98.5 97.4	4.6036 [4.5549]	101.1%			
PFHpS	(449.0 / 80.0) 2289006 (449.0 / 99.0) 609963	(8.77, 0.93) (N/A, -0.02, 0.1)	541.0 507.1	0.2665 97.4 95.8	4.6040 [4.7570]	96.8%			
PFOS	(499.0 / 80.0) 2862914 (499.0 / 99.0) 580951	(9.45, 1.00) (0.00, N/A, 0.0)	919.8 143.7	0.2029 83.4 94.5	4.6290 [4.6375]	99.8%			
PFNS	(549.0 / 80.0) 3099939 (549.0 / 99.0) 788682	(9.76, 1.03) (N/A, 0.00, -0.1)	1043.7 633.7	0.2544 104.3 101.9	4.5184 [4.7994]	94.1%			
PFDS	(599.0 / 80.0) 3626423 (599.0 / 99.0) 902954	(9.92, 1.05) (N/A, 0.00, 0.0)	482.0 932.7	0.2490 110.6 120.0	4.7612 [4.8155]	98.9%			
PFDoS	(698.9 / 80.0) 1492426 (698.9 / 99.0) 332787	(10.11, 1.07) (N/A, 0.00, -0.1)	819.2 647.3	0.2230 91.1 90.0	4.6882 [4.8478]	96.7%			
4:2FTS	(327.0 / 307.0) 3413470 (327.0 / 81.0) 2140473	(5.80, 1.00) (0.00, N/A, -0.1)	849.6 1001.4	0.6271 126.9 121.5	18.2013 [18.6906]	97.4%			
6:2FTS	(427.0 / 407.0) 1953704 (427.0 / 81.0) 1369895	(7.54, 1.00) (0.00, N/A, 0.1)	642.7 666.3	0.7012 90.1 108.3	20.3340 [18.9808]	107.1%			
8:2FTS	(527.0 / 507.0) 1907864 (527.0 / 81.0) 1192967	(8.95, 1.00) (-0.01, N/A, -0.1)	540.3 687.8	0.6253 110.5 77.9	19.6307 [19.1658]	102.4%			

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) 3321950 (498.0 / 478.0) 65847	(10.18, 1.00) (0.00, N/A, 0.0)	993.0 317.1	0.0198 95.1 84.5	4.7231 [5.0000]	94.5%			
NMeFOSA	(511.9 / 219.0) 2689187 (511.9 / 169.0) 1827560	(10.61, 1.00) (0.00, N/A, -0.1)	768.2 747.4	0.6796 94.4 105.3	20.8590 [20.0000]	104.3%			
NEIFOSA	(526.0 / 219.0) 3132422 (526.0 / 169.0) 3211344	(10.70, 1.00) (0.00, N/A, 0.0)	1469.4 1335.0	1.0252 96.9 100.7	21.3715 [20.0000]	106.9%			
NMeFOSAA	(570.0 / 419.0) 518787 (570.0 / 483.0) 249491	(9.50, 1.00) (0.00, N/A, 0.0)	325.1 318.0	0.4809 78.2 99.7	5.1129 [5.0000]	102.3%			
NEIFOSAA	(584.0 / 419.0) 494635 (584.0 / 526.0) 285740	(9.69, 1.00) (0.01, N/A, 0.0)	1064.9 1109.4	0.5777 78.8 92.6	4.3372 [5.0000]	86.7%			
NMeFOSE	(616.1 / 59.0) 664365	(10.58, 1.00) (0.01, N/A, 0.0)	967.1	N/A 0.0 0.0	21.8478 [20.0000]	109.2%			
NEtFOSE	(630.0 / 59.0) 117244	(10.67, 1.00) (0.00, N/A, 0.0)	1278.0	N/A 0.0 0.0	18.9325 [20.0000]	94.7%			
HFPO-DA	(285.0 / 169.0) 882586 (285.0 / 185.0) 2449499	(6.48, 1.00) (0.00, N/A, 0.1)	635.1 1011.7	2.7754 101.1 96.9	9.5697 [10.0000]	95.7%			
ADONA	(377.0 / 85.0) 3820199 (377.0 / 251.0) 454642	(7.38, 1.14) (N/A, -0.01, 0.0)	809.7 594.3	0.1190 95.6 85.9	9.3257 [9.4270]	98.9%			
9CI-Pf3ONS	(531.0 / 351.0) 9805062 (533.0 / 353.0) 3278869	(9.72, 1.50) (N/A, 0.00, 0.1)	869.1 1165.8	0.3344 113.0 107.2	8.7961 [9.3325]	94.3%			
11CI-PF3OUDS	(631.0 / 451.0) 5685188 (633.0 / 453.0) 1703843	(10.01, 1.55) (N/A, 0.00, 0.1)	1001.6 996.6	0.2997 90.6 106.5	9.9297 [9.4321]	105.3%			

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
3:3FTCA	(241.0 / 177.0) 104259 (241.0 / 117.0) 174388	(4.46, 0.90) (N/A, 0.00, 0.1)	668.4 551.6	1.6726 100.0 97.1	20.5674 [20.0000]	102.8%			
5:3FTCA	(341.0 / 236.7) 788942 (341.0 / 217.0) 1318809	(6.77, 1.10) (N/A, 0.00, -0.1)	487.0 724.6	1.6716 114.2 107.9	18.9913 [20.0000]	95.0%			
7:3FTCA	(441.0 / 317.0) 919770 (441.0 / 337.0) 748947	(8.58, 1.40) (N/A, -0.01, -0.1)	510.5 506.4	0.8143 97.2 100.5	19.2421 [20.0000]	96.2%			
PFEESA	(315.0 / 135.0) 2288494 (315.0 / 83.0) 685799	(6.58, 1.07) (N/A, -0.01, -0.1)	812.5 917.0	0.2997 97.6 100.6	8.8909 [8.9246]	99.6%			
PFMPA	(229.0 / 85.0) 405609	(4.17, 0.84) (N/A, 0.00, 0.0)	889.6	N/A 0.0 0.0	10.0618 [10.0000]	100.6%			
PFMBA	(279.0 / 85.0) 1402899	(5.36, 1.08) (N/A, 0.00, 0.0)	908.6	N/A 0.0 0.0	10.0684 [10.0000]	100.7%			
NFDHA	(295.0 / 201.0) 1209280 (295.0 / 85.0) 1064405	(6.01, 0.98) (N/A, 0.00, 0.0)	585.4 1017.5	0.8802 99.7 94.6	10.2008 [10.0000]	102.0%			
13C3_PFBA_IIS	(216.0 / 172.0) 153011	(3.66, N/A) (N/A, 0.00, N/A)	655.4	N/A	1.0993 [1.0000]	109.9% { 93.9% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 236169	(6.13, N/A) (N/A, 0.00, N/A)	716.6	N/A	1.0227 [1.0000]	102.3% { 105.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 226242	(7.88, N/A) (N/A, -0.01, N/A)	921.7	N/A	1.0291 [1.0000]	102.9% { 92.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 189838	(8.62, N/A) (N/A, -0.01, N/A)	333.2	N/A	1.0251 [1.0000]	102.5% { 105.3% }			

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) 191280	(9.30, N/A) (N/A, -0.01, N/A)	225.9	N/A	1.0350 [1.0000]	103.5% { 95.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 443899	(8.00, N/A) (N/A, -0.01, N/A)	793.0	N/A	1.0995 [1.0000]	110.0% { 107.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 316540	(9.45, N/A) (N/A, -0.01, N/A)	445.3	N/A	0.9917 [1.0000]	99.2% { 93.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1189485	(3.66, N/A) (N/A, 0.00, N/A)	804.1	N/A	7.5532 [8.0000]	94.4% { 95.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 668957	(4.98, N/A) (N/A, 0.00, N/A)	691.6	N/A	4.0710 [4.0000]	101.8% { 100.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 547502	(6.13, N/A) (N/A, 0.00, N/A)	538.5	N/A	2.0145 [2.0000]	100.7% { 103.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 458249	(7.06, N/A) (N/A, -0.01, N/A)	546.7	N/A	1.9328 [2.0000]	96.6% { 98.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 527878	(7.88, N/A) (N/A, -0.01, N/A)	784.2	N/A	2.1276 [2.0000]	106.4% { 103.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 199895	(8.62, N/A) (N/A, -0.02, N/A)	584.6	N/A	0.9576 [1.0000]	95.8% { 109.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 245433	(9.30, N/A) (N/A, -0.01, N/A)	332.6	N/A	0.9022 [1.0000]	90.2% { 98.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 334447	(9.72, N/A) (N/A, 0.00, N/A)	335.9	N/A	0.8643 [1.0000]	86.4% { 103.9% }			

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) 362950	(9.90, N/A) (N/A, 0.00, N/A)	618.7	N/A	0.9397 [1.0000]	94.0% { 98.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 258790	(10.13, N/A) (N/A, 0.01, N/A)	415.1	N/A	1.0089 [1.0000]	100.9% { 93.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1361464	(6.08, N/A) (N/A, 0.00, N/A)	761.7	N/A	1.8140 [2.0000]	90.7% { 96.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 705070	(8.00, N/A) (N/A, -0.01, N/A)	903.4	N/A	1.7657 [2.0000]	88.3% { 101.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1139581	(9.45, N/A) (N/A, -0.01, N/A)	260.2	N/A	2.0977 [2.0000]	104.9% { 107.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 226874	(5.80, N/A) (N/A, 0.00, N/A)	566.6	N/A	3.5690 [4.0000]	89.2% { 100.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 249960	(7.54, N/A) (N/A, -0.01, N/A)	664.2	N/A	3.2661 [4.0000]	81.7% { 86.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 245375	(8.96, N/A) (N/A, 0.00, N/A)	512.5	N/A	3.2028 [4.0000]	80.1% { 108.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1488424	(10.18, N/A) (N/A, 0.00, N/A)	783.7	N/A	2.1675 [2.0000]	108.4% { 105.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 316314	(10.61, N/A) (N/A, 0.00, N/A)	919.5	N/A	2.1097 [2.0000]	105.5% { 93.3% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 324982	(10.70, N/A) (N/A, 0.00, N/A)	592.9	N/A	2.3480 [2.0000]	117.4% { 107.8% }			

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) 520823	(9.50, N/A) (N/A, -0.01, N/A)	373.5	N/A	4.0316 [4.0000]	100.8% { 89.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 508120	(9.68, N/A) (N/A, 0.00, N/A)	287.2	N/A	4.4625 [4.0000]	111.6% { 112.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 481835	(10.57, N/A) (N/A, 0.00, N/A)	1331.1	N/A	22.8871 [20.0000]	114.4% { 102.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 241891	(10.67, N/A) (N/A, 0.00, N/A)	1648.9	N/A	25.2384 [20.0000]	126.2% { 110.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1213887	(6.48, N/A) (N/A, -0.01, N/A)	890.9	N/A	8.4008 [8.0000]	105.0% { 99.9% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633 SPLP

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

Work Order: 22L0023
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2252011
 Sequence: SB03942

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV4	PFBA	20.0	20.5	103	ng/mL	+/- 30.00%
	PFPEA	10.0	9.89	98.9	ng/mL	+/- 30.00%
	PFHXA	5.00	5.00	100	ng/mL	+/- 30.00%
	PFHPA	5.00	5.95	119	ng/mL	+/- 30.00%
	PFOA	5.00	4.87	97.4	ng/mL	+/- 30.00%
	PFNA	5.00	4.90	98.0	ng/mL	+/- 30.00%
	PFDA	5.00	4.61	92.2	ng/mL	+/- 30.00%
	PFUnA	5.00	5.25	105	ng/mL	+/- 30.00%
	PFDOA	5.00	4.57	91.4	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.92	98.4	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.79	95.7	ng/mL	+/- 30.00%
	PFBS	4.42	4.35	98.5	ng/mL	+/- 30.00%
	PFPEs	4.70	4.88	104	ng/mL	+/- 30.00%
	PFHXS	4.58	4.45	97.1	ng/mL	+/- 30.00%
	PFHPS	4.78	4.77	99.9	ng/mL	+/- 30.00%
	PFOS	4.65	4.18	89.9	ng/mL	+/- 30.00%
	PFNS	4.80	4.35	90.7	ng/mL	+/- 30.00%
	PFDS	4.82	4.26	88.4	ng/mL	+/- 30.00%
	PFDOS	4.85	4.24	87.5	ng/mL	+/- 30.00%
	4:2FTS	18.8	18.0	96.0	ng/mL	+/- 30.00%
	6:2FTS	19.0	19.5	103	ng/mL	+/- 30.00%
	8:2FTS	19.2	21.0	109	ng/mL	+/- 30.00%
	PFOSA	5.00	5.35	107	ng/mL	+/- 30.00%
	NMeFOSA	20.0	21.6	108	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.6	108	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.41	108	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.70	94.1	ng/mL	+/- 30.00%
	NMeFOSE	20.0	21.9	110	ng/mL	+/- 30.00%
	NEtFOSE	20.0	20.2	101	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.92	99.2	ng/mL	+/- 30.00%

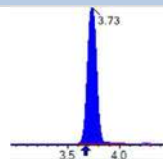
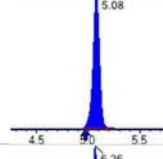
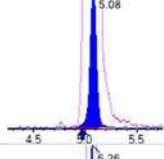
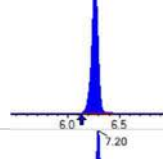
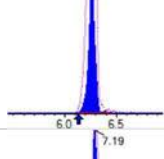
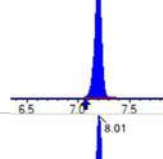
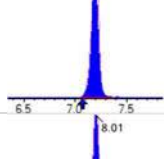
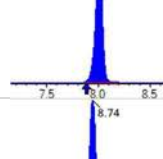
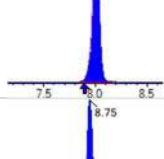
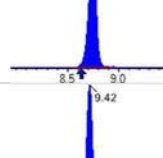
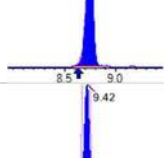
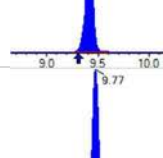
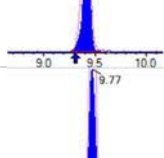
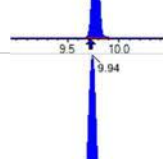
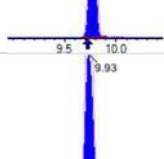
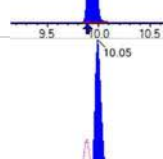
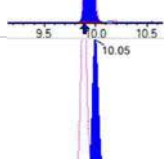
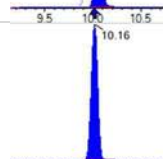
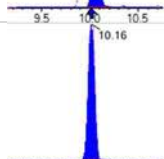
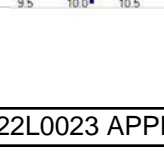
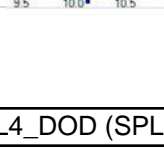
INITIAL AND CONTINUING CALIBRATION CHECK

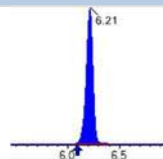
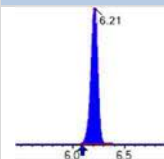
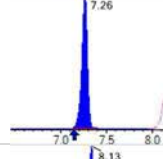
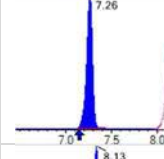
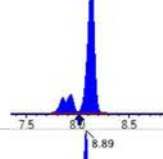
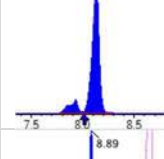
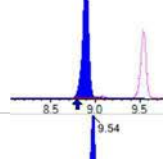
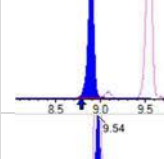
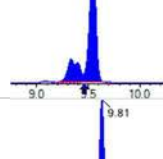
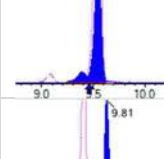
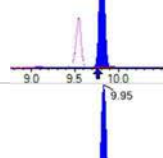
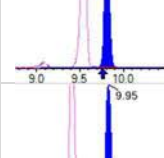
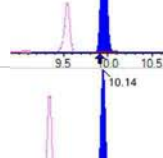
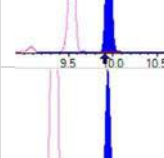
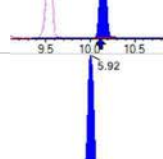
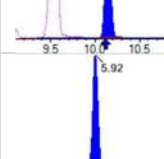
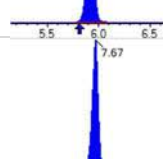
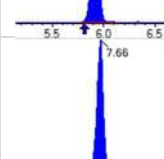
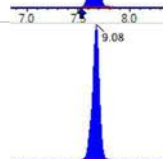
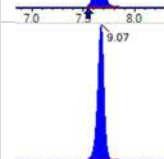
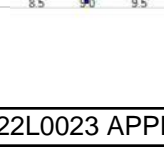
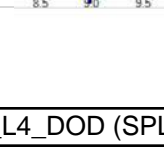
EPA 1633 SPLP

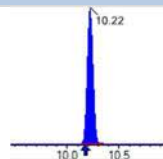
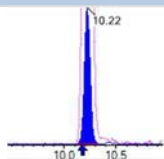
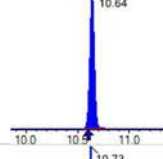
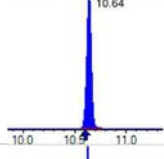
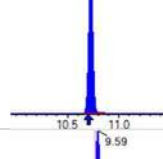
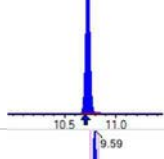
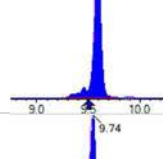
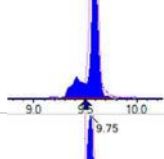
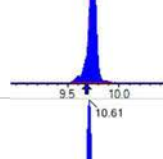
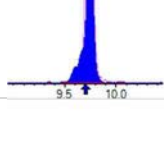
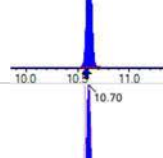
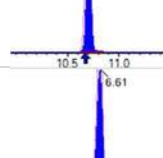
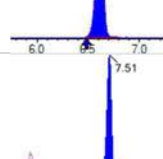
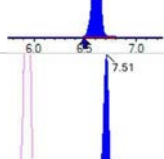
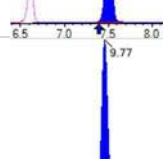
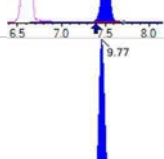
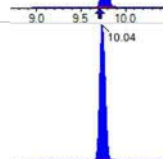
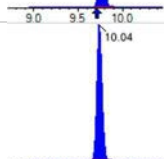
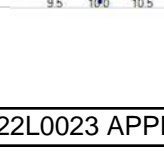
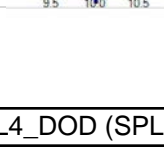
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 Instrument ID: Saphira
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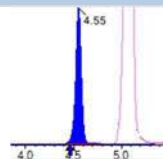
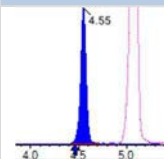
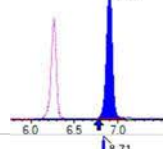
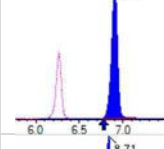
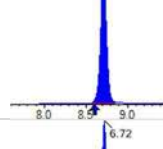
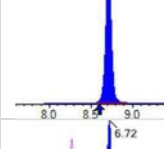
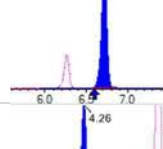
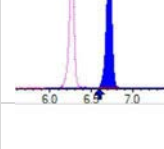
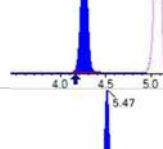
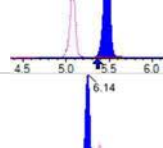
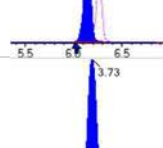
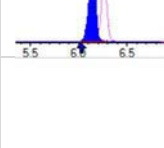
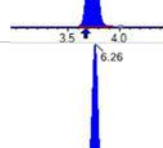
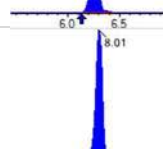
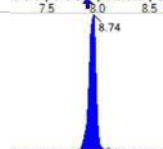

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 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2252011
 Sequence: SB03942

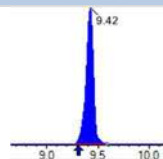
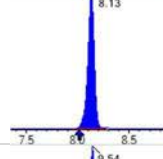
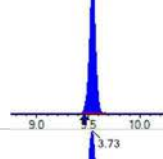
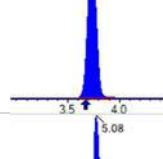
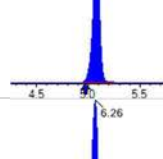
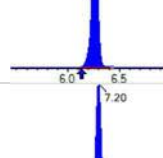
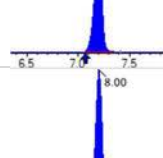
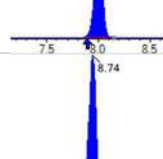
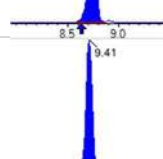
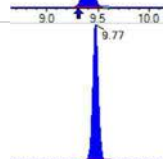

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03942-CCV4	ADONA	9.45	9.41	99.5	ng/mL	+/- 30.00%
	PFEESA	8.90	8.51	95.6	ng/mL	+/- 30.00%
	PFMPA	10.0	10.0	100	ng/mL	+/- 30.00%
	PFMBA	10.0	9.77	97.7	ng/mL	+/- 30.00%
	NFDHA	10.0	9.60	96.0	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	9.41	101	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.84	104	ng/mL	+/- 30.00%
	3:3FTCA	20.0	20.8	104	ng/mL	+/- 30.00%
	5:3FTCA	20.0	19.1	95.5	ng/mL	+/- 30.00%
	7:3FTCA	20.0	19.8	99.0	ng/mL	+/- 30.00%

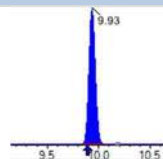
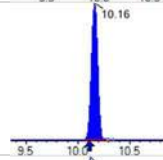
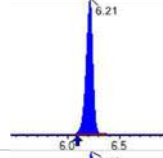
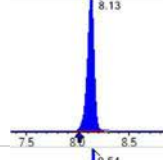
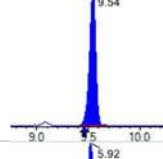
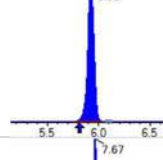
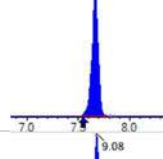
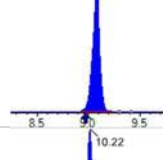
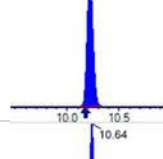
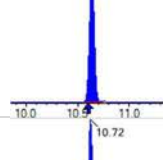
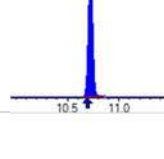
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 2046471	(3.73, 1.00) (0.00, N/A, 0.0)	76.6	N/A 0.0 0.0	20.5114 [20.0000]	102.6%			
PFPeA	(262.9 / 219.0) 1379976 (262.9 / 69.0) 15523	(5.08, 1.00) (0.00, N/A, 0.0)	847.7 278.3	0.0112 100.5 97.0	9.8896 [10.0000]	98.9%			
PFHxA	(313.0 / 269.0) 1147750 (313.0 / 119.0) 97584	(6.26, 1.00) (0.00, N/A, 0.1)	569.7 565.1	0.0850 87.0 91.7	5.0043 [5.0000]	100.1%			
PFHpA	(363.0 / 319.0) 1163134 (363.0 / 169.0) 313887	(7.20, 1.00) (0.00, N/A, 0.3)	596.5 513.2	0.2699 86.6 86.5	5.9482 [5.0000]	119.0%			
PFOA	(413.0 / 369.0) 1145932 (413.0 / 169.0) 388825	(8.01, 1.00) (0.00, N/A, 0.0)	622.0 715.9	0.3393 103.8 103.1	4.8722 [5.0000]	97.4%			
PFNA	(463.0 / 419.0) 865815 (463.0 / 169.0) 196083	(8.74, 1.00) (0.00, N/A, -0.1)	469.2 133.1	0.2265 117.5 98.7	4.8975 [5.0000]	98.0%			
PFDA	(513.0 / 469.0) 1316618 (513.0 / 169.0) 128093	(9.42, 1.00) (0.00, N/A, -0.1)	471.7 286.4	0.0973 101.8 90.1	4.6100 [5.0000]	92.2%			
PFUnA	(563.0 / 519.0) 1540520 (563.0 / 169.0) 150400	(9.77, 1.00) (0.00, N/A, 0.2)	1015.4 372.9	0.0976 112.4 95.3	5.2463 [5.0000]	104.9%			
PFDoA	(613.0 / 569.0) 1678553 (613.0 / 169.0) 218191	(9.94, 1.00) (0.00, N/A, 0.1)	875.4 412.0	0.1300 93.4 110.8	4.5695 [5.0000]	91.4%			
PFTrDA	(663.0 / 619.0) 1565486 (663.0 / 169.0) 321054	(10.05, 1.01) (N/A, 0.03, -0.3)	1117.1 552.0	0.2051 100.2 96.1	4.9188 [5.0000]	98.4%			
PFTeDA	(713.0 / 669.0) 1214126 (713.0 / 169.0) 255040	(10.16, 1.00) (0.00, N/A, 0.1)	757.6 542.2	0.2101 103.3 119.4	4.7864 [5.0000]	95.7%			

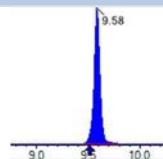
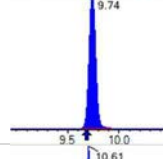
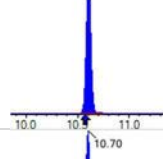
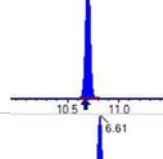
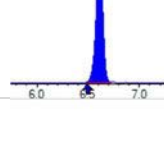
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 1547492 (298.9 / 99.0) 1058828	(6.21, 1.00) (0.00, N/A, 0.2)	669.6 639.0	0.6842 111.2 109.5	4.3521 [4.4237]	98.4%			
PFPeS	(349.0 / 80.0) 3195936 (349.0 / 99.0) 1134180	(7.26, 0.89) (N/A, 0.13, 0.0)	800.1 665.4	0.3549 99.7 103.5	4.8821 [4.6919]	104.1%			
PFHxS	(399.0 / 80.0) 2532187 (399.0 / 99.0) 845792	(8.13, 1.00) (0.00, N/A, 0.1)	3147.7 4006.0	0.3340 99.4 98.3	4.4479 [4.5549]	97.7%			
PFHpS	(449.0 / 80.0) 2530088 (449.0 / 99.0) 728672	(8.89, 0.93) (N/A, 0.11, 0.1)	516.0 717.9	0.2880 105.2 103.6	4.7741 [4.7570]	100.4%			
PFOS	(499.0 / 80.0) 2756429 (499.0 / 99.0) 577357	(9.54, 1.00) (0.00, N/A, 0.0)	114.8 173.8	0.2095 86.1 97.6	4.1811 [4.6375]	90.2%			
PFNS	(549.0 / 80.0) 3182142 (549.0 / 99.0) 810054	(9.81, 1.03) (N/A, 0.04, 0.1)	973.9 823.0	0.2546 104.3 102.0	4.3512 [4.7994]	90.7%			
PFDS	(599.0 / 80.0) 3457888 (599.0 / 99.0) 921307	(9.95, 1.04) (N/A, 0.04, 0.2)	1074.1 675.4	0.2664 118.4 128.4	4.2591 [4.8155]	88.4%			
PFDoS	(698.9 / 80.0) 1439570 (698.9 / 99.0) 339123	(10.14, 1.06) (N/A, 0.03, 0.2)	807.1 691.8	0.2356 96.3 95.1	4.2424 [4.8478]	87.5%			
4:2FTS	(327.0 / 307.0) 3237949 (327.0 / 81.0) 1674182	(5.92, 1.00) (0.00, N/A, 0.3)	771.7 747.7	0.5171 104.7 100.2	18.0421 [18.6906]	96.5%			
6:2FTS	(427.0 / 407.0) 2040306 (427.0 / 81.0) 1361394	(7.67, 1.00) (0.00, N/A, 0.1)	764.8 654.3	0.6672 85.7 103.1	19.5159 [18.9808]	102.8%			
8:2FTS	(527.0 / 507.0) 1973810 (527.0 / 81.0) 1385177	(9.08, 1.00) (0.00, N/A, 0.1)	628.6 661.9	0.7018 124.0 87.4	20.9711 [19.1658]	109.4%			

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) 3682976 (498.0 / 478.0) 79385	(10.22, 1.00) (0.00, N/A, -0.1)	789.2 403.9	0.0216 103.4 91.9	5.3489 [5.0000]	107.0%			
NMeFOSA	(511.9 / 219.0) 2862053 (511.9 / 169.0) 1823062	(10.64, 1.00) (0.00, N/A, 0.0)	970.9 997.9	0.6370 88.4 98.7	21.5937 [20.0000]	108.0%			
NEIFOSA	(526.0 / 219.0) 3153429 (526.0 / 169.0) 3218471	(10.73, 1.00) (0.00, N/A, 0.0)	1151.4 1241.2	1.0206 96.5 100.3	21.5963 [20.0000]	108.0%			
NMeFOSAA	(570.0 / 419.0) 585752 (570.0 / 483.0) 261444	(9.59, 1.00) (0.01, N/A, 0.1)	538.5 421.6	0.4463 72.6 92.5	5.4127 [5.0000]	108.3%			
NEIFOSAA	(584.0 / 419.0) 522223 (584.0 / 526.0) 291920	(9.74, 1.00) (0.01, N/A, 0.0)	1977.9 3503.3	0.5590 76.2 89.6	4.7028 [5.0000]	94.1%			
NMeFOSE	(616.1 / 59.0) 664836	(10.61, 1.00) (0.00, N/A, 0.0)	928.2	N/A 0.0 0.0	21.9091 [20.0000]	109.5%			
NEtFOSE	(630.0 / 59.0) 109269	(10.70, 1.00) (0.01, N/A, 0.0)	1141.4	N/A 0.0 0.0	20.1745 [20.0000]	100.9%			
HFPO-DA	(285.0 / 169.0) 850730 (285.0 / 185.0) 2314431	(6.61, 1.00) (0.00, N/A, 0.1)	748.4 704.3	2.7205 99.1 95.0	9.9154 [10.0000]	99.2%			
ADONA	(377.0 / 85.0) 3584843 (377.0 / 251.0) 464996	(7.51, 1.14) (N/A, 0.12, 0.0)	913.2 517.6	0.1297 104.2 93.7	9.4068 [9.4270]	99.8%			
9CI-Pf3ONS	(531.0 / 351.0) 9737798 (533.0 / 353.0) 3421987	(9.77, 1.48) (N/A, 0.05, -0.1)	712.9 738.1	0.3514 118.7 112.7	9.4139 [9.3325]	100.9%			
11CI-PF3OUDS	(631.0 / 451.0) 5240339 (633.0 / 453.0) 1637030	(10.04, 1.52) (N/A, 0.03, 0.0)	1374.8 1174.4	0.3124 94.4 111.0	9.8384 [9.4321]	104.3%			

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
3:3FTCA	(241.0 / 177.0) 100323 (241.0 / 117.0) 165871	(4.55, 0.90) (N/A, 0.10, 0.1)	579.3 680.9	1.6534 98.8 96.0	20.8321 [20.0000]	104.2%			
5:3FTCA	(341.0 / 236.7) 774341 (341.0 / 217.0) 1215456	(6.90, 1.10) (N/A, 0.13, -0.1)	566.1 548.1	1.5697 107.2 101.4	19.1073 [20.0000]	95.5%			
7:3FTCA	(441.0 / 317.0) 923276 (441.0 / 337.0) 806717	(8.71, 1.39) (N/A, 0.12, 0.0)	498.7 536.4	0.8738 104.3 107.8	19.7999 [20.0000]	99.0%			
PFEESA	(315.0 / 135.0) 2135793 (315.0 / 83.0) 646367	(6.72, 1.07) (N/A, 0.13, 0.0)	726.4 816.7	0.3026 98.6 101.6	8.5058 [8.9246]	95.3%			
PFMPA	(229.0 / 85.0) 384110	(4.26, 0.84) (N/A, 0.09, 0.0)	946.3	N/A 0.0 0.0	10.0297 [10.0000]	100.3%			
PFMBA	(279.0 / 85.0) 1293598	(5.47, 1.08) (N/A, 0.11, 0.0)	827.3	N/A 0.0 0.0	9.7723 [10.0000]	97.7%			
NFDHA	(295.0 / 201.0) 1110761 (295.0 / 85.0) 1023816	(6.14, 0.98) (N/A, 0.13, 0.0)	724.4 1209.2	0.9217 104.4 99.0	9.6047 [10.0000]	96.0%			
13C3_PFBA_IIS	(216.0 / 172.0) 148112	(3.73, N/A) (N/A, 0.07, N/A)	656.0	N/A	1.0641 [1.0000]	106.4% { 90.9% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 240281	(6.26, N/A) (N/A, 0.13, N/A)	709.7	N/A	1.0405 [1.0000]	104.1% { 107.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 229571	(8.01, N/A) (N/A, 0.12, N/A)	618.4	N/A	1.0442 [1.0000]	104.4% { 94.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 201083	(8.74, N/A) (N/A, 0.11, N/A)	289.7	N/A	1.0859 [1.0000]	108.6% { 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) 180746	(9.42, N/A) (N/A, 0.11, N/A)	433.9	N/A	0.9780 [1.0000]	97.8% { 90.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 438390	(8.13, N/A) (N/A, 0.12, N/A)	817.4	N/A	1.0859 [1.0000]	108.6% { 106.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 324729	(9.54, N/A) (N/A, 0.09, N/A)	445.8	N/A	1.0174 [1.0000]	101.7% { 96.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1223475	(3.73, N/A) (N/A, 0.07, N/A)	814.9	N/A	8.0260 [8.0000]	100.3% { 97.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 635526	(5.08, N/A) (N/A, 0.10, N/A)	643.7	N/A	3.8013 [4.0000]	95.0% { 95.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 534107	(6.26, N/A) (N/A, 0.13, N/A)	636.8	N/A	1.9316 [2.0000]	96.6% { 101.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 429042	(7.20, N/A) (N/A, 0.13, N/A)	584.4	N/A	1.7787 [2.0000]	88.9% { 92.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 478344	(8.00, N/A) (N/A, 0.12, N/A)	496.4	N/A	1.9000 [2.0000]	95.0% { 93.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 206027	(8.74, N/A) (N/A, 0.11, N/A)	368.7	N/A	0.9318 [1.0000]	93.2% { 112.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 300049	(9.41, N/A) (N/A, 0.10, N/A)	521.8	N/A	1.1672 [1.0000]	116.7% { 119.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 371561	(9.77, N/A) (N/A, 0.05, N/A)	375.9	N/A	1.0162 [1.0000]	101.6% { 115.5% }			

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) 426110	(9.93, N/A) (N/A, 0.04, N/A)	601.2	N/A	1.1676 [1.0000]	116.8% { 115.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 286210	(10.16, N/A) (N/A, 0.04, N/A)	487.9	N/A	1.1809 [1.0000]	118.1% { 103.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1297131	(6.21, N/A) (N/A, 0.12, N/A)	626.9	N/A	1.7500 [2.0000]	87.5% { 92.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 732880	(8.13, N/A) (N/A, 0.11, N/A)	729.8	N/A	1.8584 [2.0000]	92.9% { 105.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1214739	(9.54, N/A) (N/A, 0.09, N/A)	316.3	N/A	2.1796 [2.0000]	109.0% { 114.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 217107	(5.92, N/A) (N/A, 0.12, N/A)	605.0	N/A	3.4583 [4.0000]	86.5% { 96.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 271982	(7.67, N/A) (N/A, 0.12, N/A)	771.4	N/A	3.5985 [4.0000]	90.0% { 94.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 237631	(9.08, N/A) (N/A, 0.12, N/A)	370.7	N/A	3.1407 [4.0000]	78.5% { 105.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1457094	(10.22, N/A) (N/A, 0.04, N/A)	904.4	N/A	2.0683 [2.0000]	103.4% { 102.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 325193	(10.64, N/A) (N/A, 0.03, N/A)	841.8	N/A	2.1142 [2.0000]	105.7% { 95.9% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 323756	(10.72, N/A) (N/A, 0.03, N/A)	1081.0	N/A	2.2801 [2.0000]	114.0% { 107.4% }			

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) 555478	(9.58, N/A) (N/A, 0.08, N/A)	461.4	N/A	4.1915 [4.0000]	104.8% { 95.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 494751	(9.74, N/A) (N/A, 0.06, N/A)	360.3	N/A	4.2355 [4.0000]	105.9% { 109.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 480830	(10.61, N/A) (N/A, 0.04, N/A)	1425.4	N/A	22.2634 [20.0000]	111.3% { 102.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 211558	(10.70, N/A) (N/A, 0.03, N/A)	1286.7	N/A	21.5169 [20.0000]	107.6% { 96.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1129284	(6.61, N/A) (N/A, 0.13, N/A)	755.9	N/A	7.6816 [8.0000]	96.0% { 92.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03941
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03941-ICB1	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.0144	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	0.0146	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	0.0124	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: SB03941
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03941-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	8.24	ng/mL		
	13C5-PFPEA	4.11	ng/mL		
	13C5-PFHXA	1.95	ng/mL		
	13C4-PFHPA	2.08	ng/mL		
	13C8-PFOA	2.18	ng/mL		
	13C9-PFNA	1.04	ng/mL		
	13C6-PFDA	1.03	ng/mL		
	13C7-PFUnA	1.08	ng/mL		
	13C2-PFDOA	1.09	ng/mL		
	13C2-PFTEDA	1.15	ng/mL		
	13C3-PFBS	2.21	ng/mL		
	13C3-PFHXS	2.21	ng/mL		
	13C8-PFOS	2.47	ng/mL		
	13C2-4:2FTS	4.05	ng/mL		
	13C2-6:2FTS	4.81	ng/mL		
	13C2-8:2FTS	4.00	ng/mL		
	13C8-PFOSA	2.42	ng/mL		
	D5-NETFOSA	2.32	ng/mL		
	D3-NMEFOSA	2.31	ng/mL		
	D3-NMEFOSAA	4.78	ng/mL		
	D5-NETFOSAA	4.58	ng/mL		
	D7-NMEFOSE	21.9	ng/mL		
	D9-NETFOSE	21.3	ng/mL		
	13C3-HFPO-DA	8.60	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03941-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21A (9)
 Acquired: 2022/12/21 - 16:08

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) 3496 (413.0 / 169.0) 986	(7.98, 1.00) (0.01, N/A, -0.4)	15.4 42.4	0.2821 86.3 86.3	0.0144	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			

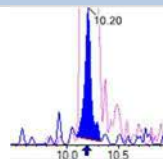
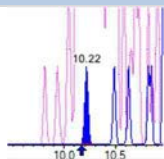
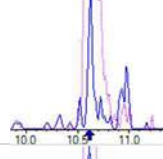
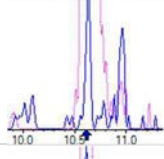
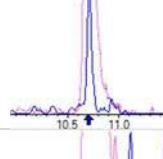
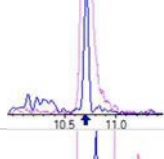
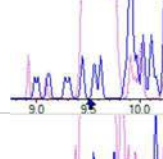
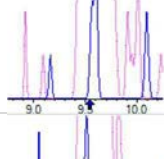
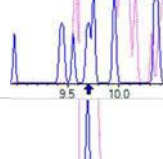
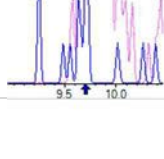
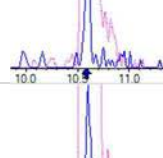
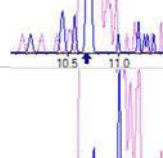
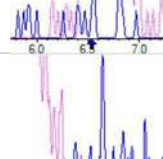
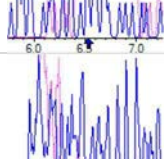
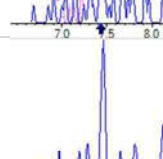
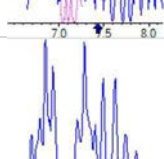
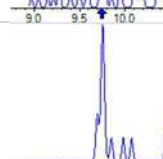
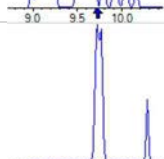
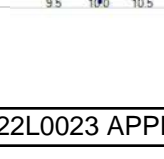
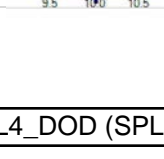


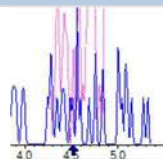
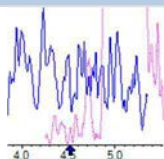
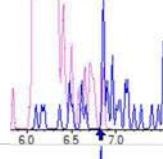
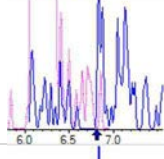
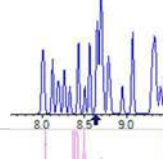
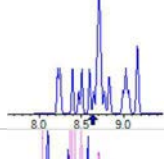
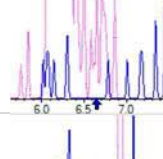
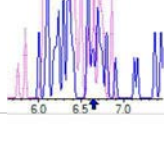
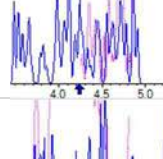
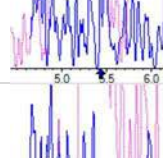
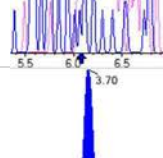
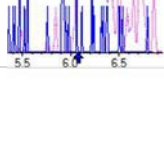
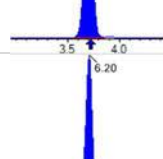
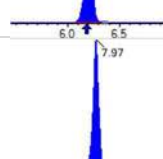
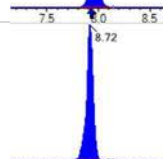

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

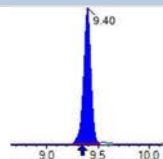
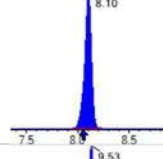
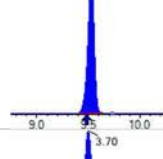
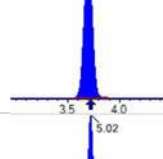
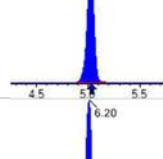
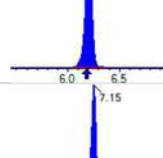
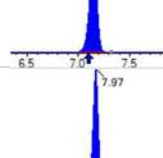
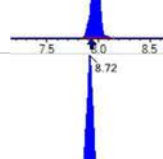
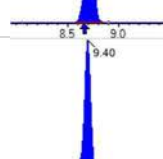
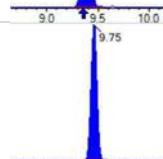

Sample I.D.: SB03941-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21A (9)
 Acquired: 2022/12/21 - 16:08

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) 9898 (499.0 / 99.0) 1897	(9.52, 1.00) (0.00, N/A, -1.2)	48.5 19.3	0.1916 78.8 78.8	0.0146	N/A			MI5 DG 2022-12-21
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.) (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) 9076 (498.0 / 478.0) 300	(10.20, 1.00) (0.00, N/A, -0.8)	34.8 12.4	0.0330 158.5 158.5	0.0124	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	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 137297	(3.70, N/A) (N/A, -0.02, N/A)	766.0	N/A	0.9864 [1.0000]	98.6% { 90.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 223416	(6.20, N/A) (N/A, 0.02, N/A)	460.7	N/A	0.9675 [1.0000]	96.8% { 95.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 206725	(7.97, N/A) (N/A, 0.05, N/A)	562.5	N/A	0.9403 [1.0000]	94.0% { 86.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 186093	(8.72, N/A) (N/A, 0.05, N/A)	497.6	N/A	1.0049 [1.0000]	100.5% { 92.0% }			

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) 184687	(9.40, N/A) (N/A, 0.05, N/A)	233.6	N/A	0.9993 [1.0000]	99.9% { 106.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 371811	(8.10, N/A) (N/A, 0.05, N/A)	662.9	N/A	0.9210 [1.0000]	92.1% { 88.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 294523	(9.53, N/A) (N/A, 0.05, N/A)	539.0	N/A	0.9228 [1.0000]	92.3% { 89.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1164618	(3.70, N/A) (N/A, -0.02, N/A)	949.7	N/A	8.2417 [8.0000]	103.0% { 97.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 639563	(5.02, N/A) (N/A, -0.01, N/A)	719.9	N/A	4.1143 [4.0000]	102.9% { 91.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 500638	(6.20, N/A) (N/A, 0.02, N/A)	697.9	N/A	1.9473 [2.0000]	97.4% { 92.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 466966	(7.15, N/A) (N/A, 0.04, N/A)	691.4	N/A	2.0820 [2.0000]	104.1% { 95.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 494304	(7.97, N/A) (N/A, 0.05, N/A)	917.1	N/A	2.1804 [2.0000]	109.0% { 99.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 213587	(8.72, N/A) (N/A, 0.05, N/A)	564.9	N/A	1.0438 [1.0000]	104.4% { 97.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 271082	(9.40, N/A) (N/A, 0.05, N/A)	432.0	N/A	1.0320 [1.0000]	103.2% { 96.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 404733	(9.75, N/A) (N/A, 0.03, N/A)	435.5	N/A	1.0833 [1.0000]	108.3% { 101.6% }			

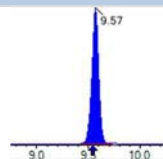
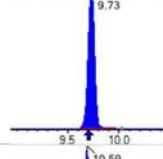
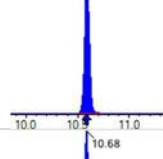
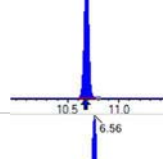
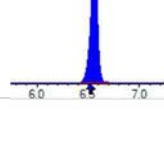


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03941-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21A (9)
 Acquired: 2022/12/21 - 16:08

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) 407883	(9.92, N/A) (N/A, 0.02, N/A)	595.7	N/A	1.0938 [1.0000]	109.4% { 105.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 285097	(10.15, N/A) (N/A, 0.02, N/A)	425.4	N/A	1.1512 [1.0000]	115.1% { 117.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1390129	(6.16, N/A) (N/A, 0.01, N/A)	781.9	N/A	2.2113 [2.0000]	110.6% { 101.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 737924	(8.10, N/A) (N/A, 0.05, N/A)	828.7	N/A	2.2062 [2.0000]	110.3% { 97.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1246594	(9.53, N/A) (N/A, 0.05, N/A)	598.1	N/A	2.4662 [2.0000]	123.3% { 104.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 215896	(5.86, N/A) (N/A, 0.01, N/A)	739.4	N/A	4.0548 [4.0000]	101.4% { 96.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 308341	(7.63, N/A) (N/A, 0.04, N/A)	911.4	N/A	4.8100 [4.0000]	120.3% { 112.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 256399	(9.06, N/A) (N/A, 0.06, N/A)	310.1	N/A	3.9955 [4.0000]	99.9% { 86.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1544524	(10.20, N/A) (N/A, 0.02, N/A)	1476.0	N/A	2.4173 [2.0000]	120.9% { 105.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 322844	(10.62, N/A) (N/A, 0.02, N/A)	1120.4	N/A	2.3142 [2.0000]	115.7% { 97.8% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 298222	(10.71, N/A) (N/A, 0.01, N/A)	1079.5	N/A	2.3157 [2.0000]	115.8% { 104.8% }			

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) 574276	(9.57, N/A) (N/A, 0.04, N/A)	542.0	N/A	4.7778 [4.0000]	119.4% { 112.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 485417	(9.73, N/A) (N/A, 0.03, N/A)	310.2	N/A	4.5818 [4.0000]	114.5% { 103.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 428343	(10.59, N/A) (N/A, 0.01, N/A)	811.6	N/A	21.8673 [20.0000]	109.3% { 99.3% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 189842	(10.68, N/A) (N/A, 0.01, N/A)	1103.1	N/A	21.2885 [20.0000]	106.4% { 104.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1175027	(6.56, N/A) (N/A, 0.03, N/A)	697.1	N/A	8.5961 [8.0000]	107.5% { 100.0% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	8.32	ng/mL		
	13C5-PFPEA	4.35	ng/mL		
	13C5-PFHXA	2.03	ng/mL		
	13C4-PFHPA	2.15	ng/mL		
	13C8-PFOA	1.83	ng/mL		
	13C9-PFNA	0.974	ng/mL		
	13C6-PFDA	1.14	ng/mL		
	13C7-PFUnA	1.00	ng/mL		
	13C2-PFDOA	1.09	ng/mL		
	13C2-PFTEDA	1.26	ng/mL		
	13C3-PFBS	1.99	ng/mL		
	13C3-PFHXS	2.08	ng/mL		
	13C8-PFOS	2.17	ng/mL		
	13C2-4:2FTS	4.15	ng/mL		
	13C2-6:2FTS	4.46	ng/mL		
	13C2-8:2FTS	4.51	ng/mL		
	13C8-PFOSA	2.42	ng/mL		
	D5-NETFOSA	2.33	ng/mL		
	D3-NMEFOSA	2.27	ng/mL		
	D3-NMEFOSAA	4.12	ng/mL		
	D5-NETFOSAA	4.72	ng/mL		
	D7-NMEFOSE	23.0	ng/mL		
	D9-NETFOSAE	22.1	ng/mL		
	13C3-HFPO-DA	8.85	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (1)
 Acquired: 2022/12/21 - 16:46

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.: SB03942-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (1)
 Acquired: 2022/12/21 - 16:46

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			

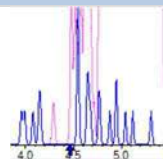
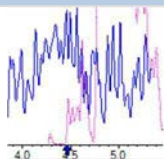
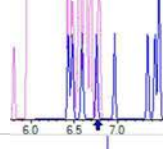
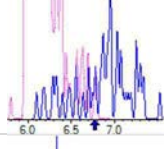
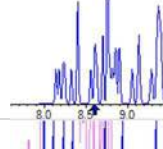
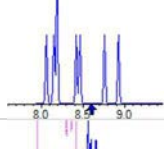
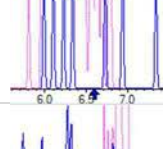
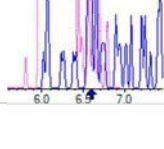
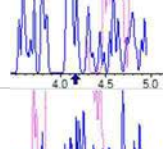
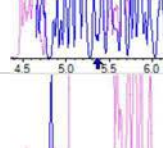
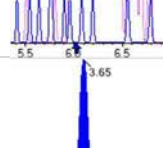
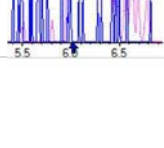
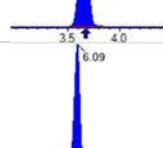
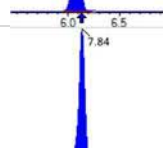
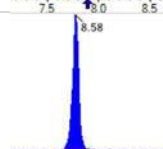



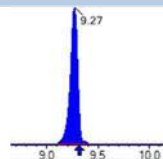
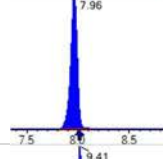
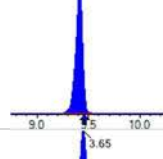
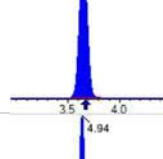
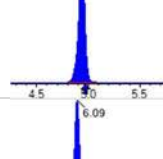
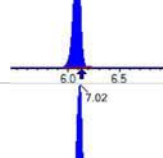
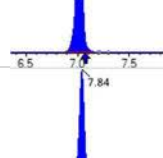
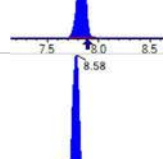
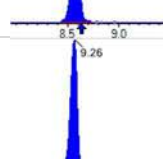
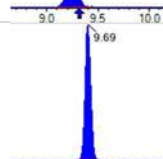

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

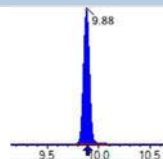
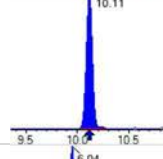
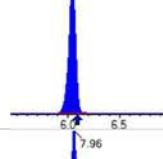
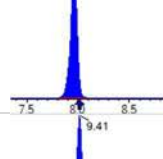
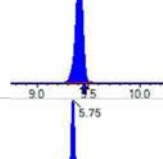
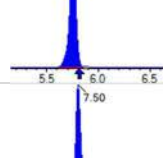
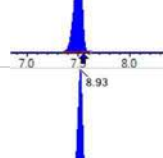
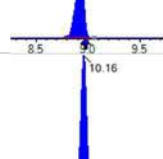
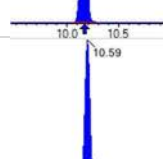
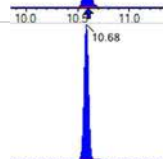

Sample I.D.: SB03942-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (1)
 Acquired: 2022/12/21 - 16:46

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	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 156629	(3.65, N/A) (N/A, -0.02, N/A)	970.0	N/A	1.1253 [1.0000]	112.5% { 96.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 224999	(6.09, N/A) (N/A, -0.05, N/A)	474.4	N/A	0.9744 [1.0000]	97.4% { 100.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 239801	(7.84, N/A) (N/A, -0.05, N/A)	684.3	N/A	1.0908 [1.0000]	109.1% { 98.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 187963	(8.58, N/A) (N/A, -0.05, N/A)	362.0	N/A	1.0150 [1.0000]	101.5% { 104.2% }			

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_IIS	(515.1 / 470.1) 171105	(9.27, N/A) (N/A, -0.04, N/A)	464.7	N/A	0.9258 [1.0000]	92.6% {85.6%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 392855	(7.96, N/A) (N/A, -0.05, N/A)	884.5	N/A	0.9731 [1.0000]	97.3% {95.0%}			
13C4_PFOS_IIS	(502.8 / 79.9) 309774	(9.41, N/A) (N/A, -0.04, N/A)	475.1	N/A	0.9705 [1.0000]	97.1% {91.8%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1340552	(3.65, N/A) (N/A, -0.02, N/A)	985.7	N/A	8.3158 [8.0000]	103.9% {107.1%}			
13C5_PFPeA_EIS	(267.9 / 223.0) 681098	(4.94, N/A) (N/A, -0.03, N/A)	811.1	N/A	4.3506 [4.0000]	108.8% {102.7%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 526457	(6.09, N/A) (N/A, -0.05, N/A)	615.5	N/A	2.0333 [2.0000]	101.7% {99.8%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 486617	(7.02, N/A) (N/A, -0.05, N/A)	670.1	N/A	2.1544 [2.0000]	107.7% {104.6%}			
13C8_PFOA_EIS	(421.0 / 376.0) 481068	(7.84, N/A) (N/A, -0.05, N/A)	637.5	N/A	1.8293 [2.0000]	91.5% {94.1%}			
13C9_PFNA_EIS	(472.0 / 427.0) 201401	(8.58, N/A) (N/A, -0.05, N/A)	286.6	N/A	0.9744 [1.0000]	97.4% {109.8%}			
13C6_PFDA_EIS	(519.0 / 474.0) 276656	(9.26, N/A) (N/A, -0.05, N/A)	564.4	N/A	1.1369 [1.0000]	113.7% {110.4%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 346094	(9.69, N/A) (N/A, -0.02, N/A)	450.9	N/A	0.9999 [1.0000]	100.0% {107.6%}			

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) 377063	(9.88, N/A) (N/A, -0.02, N/A)	378.9	N/A	1.0914 [1.0000]	109.1% {102.2%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 289934	(10.11, N/A) (N/A, 0.00, N/A)	414.2	N/A	1.2636 [1.0000]	126.4% {104.9%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1321049	(6.04, N/A) (N/A, -0.05, N/A)	750.5	N/A	1.9889 [2.0000]	99.4% {94.0%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 733531	(7.96, N/A) (N/A, -0.05, N/A)	911.3	N/A	2.0756 [2.0000]	103.8% {105.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1151375	(9.41, N/A) (N/A, -0.04, N/A)	475.0	N/A	2.1657 [2.0000]	108.3% {108.3%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 233235	(5.75, N/A) (N/A, -0.05, N/A)	712.8	N/A	4.1458 [4.0000]	103.6% {103.5%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 302320	(7.50, N/A) (N/A, -0.05, N/A)	896.0	N/A	4.4635 [4.0000]	111.6% {105.0%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 305733	(8.93, N/A) (N/A, -0.04, N/A)	487.8	N/A	4.5091 [4.0000]	112.7% {135.7%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 1628473	(10.16, N/A) (N/A, -0.02, N/A)	941.7	N/A	2.4232 [2.0000]	121.2% {115.0%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 332778	(10.59, N/A) (N/A, -0.01, N/A)	895.1	N/A	2.2680 [2.0000]	113.4% {98.2%}			
D5_NEiFOSA_EIS	(531.1 / 169.0) 315843	(10.68, N/A) (N/A, -0.01, N/A)	1082.4	N/A	2.3318 [2.0000]	116.6% {104.7%}			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (1)
 Acquired: 2022/12/21 - 16:46

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 521364	(9.46, N/A) (N/A, -0.04, N/A)	319.8	N/A	4.1240 [4.0000]	103.1% {89.8%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 525715	(9.66, N/A) (N/A, -0.02, N/A)	301.6	N/A	4.7179 [4.0000]	117.9% {116.4%}			
D7_NMeFOSE_EIS	(623.2 / 58.9) 473569	(10.56, N/A) (N/A, -0.01, N/A)	1559.1	N/A	22.9859 [20.0000]	114.9% {101.0%}			
D9_NEtFOSE_EIS	(639.2 / 58.9) 207453	(10.65, N/A) (N/A, -0.01, N/A)	1083.1	N/A	22.1180 [20.0000]	110.6% {94.8%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1217964	(6.43, N/A) (N/A, -0.05, N/A)	821.7	N/A	8.8475 [8.0000]	110.6% {100.2%}			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	7.75	ng/mL		
	13C5-PFPEA	4.38	ng/mL		
	13C5-PFHXA	2.00	ng/mL		
	13C4-PFHPA	2.16	ng/mL		
	13C8-PFOA	2.14	ng/mL		
	13C9-PFNA	0.969	ng/mL		
	13C6-PFDA	1.09	ng/mL		
	13C7-PFUnA	1.03	ng/mL		
	13C2-PFDOA	1.07	ng/mL		
	13C2-PFTEDA	1.14	ng/mL		
	13C3-PFBS	1.87	ng/mL		
	13C3-PFHXS	1.87	ng/mL		
	13C8-PFOS	1.87	ng/mL		
	13C2-4:2FTS	3.91	ng/mL		
	13C2-6:2FTS	4.04	ng/mL		
	13C2-8:2FTS	3.44	ng/mL		
	13C8-PFOSA	2.16	ng/mL		
	D5-NETFOSA	2.08	ng/mL		
	D3-NMEFOSA	2.11	ng/mL		
	D3-NMEFOSAA	3.97	ng/mL		
	D5-NETFOSAA	3.79	ng/mL		
	D7-NMEFOSE	21.3	ng/mL		
	D9-NETFOSSE	20.9	ng/mL		
	13C3-HFPO-DA	8.39	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (4)
 Acquired: 2022/12/21 - 17:49

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(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.: SB03942-CCB2
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
Path: S2022-12-21B (4)
Acquired: 2022/12/21 - 17:49

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.: SB03942-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (4)
 Acquired: 2022/12/21 - 17:49

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			

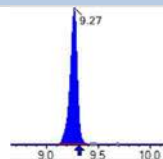
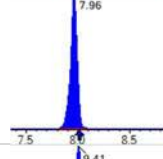
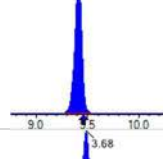
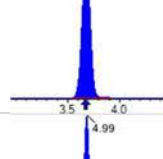
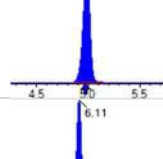
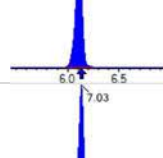
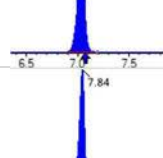
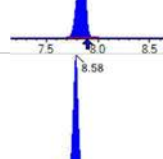
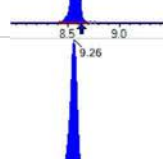
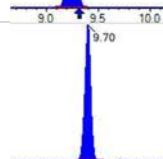



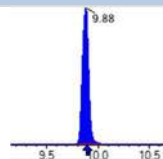
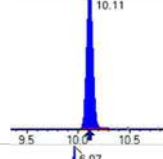
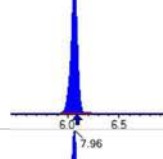
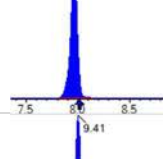
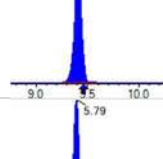
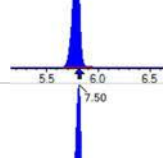
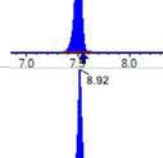
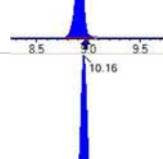
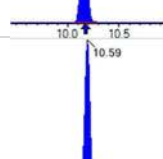
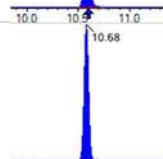

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

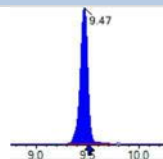
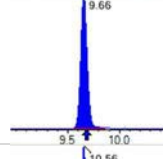
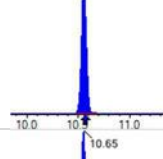
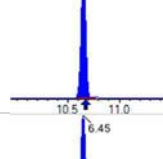
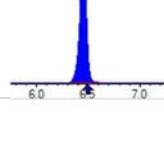
Sample I.D.: SB03942-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (4)
 Acquired: 2022/12/21 - 17:49

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 170740	(3.68, N/A) (N/A, 0.01, N/A)	589.0	N/A	1.2266 [1.0000]	122.7% { 104.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 241408	(6.11, N/A) (N/A, -0.03, N/A)	610.6	N/A	1.0454 [1.0000]	104.5% { 108.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 230431	(7.84, N/A) (N/A, -0.05, N/A)	677.8	N/A	1.0481 [1.0000]	104.8% { 94.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 203225	(8.58, N/A) (N/A, -0.05, N/A)	550.4	N/A	1.0974 [1.0000]	109.7% { 112.7% }			

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_IIS	(515.1 / 470.1) 179039	(9.27, N/A) (N/A, -0.05, N/A)	391.5	N/A	0.9688 [1.0000]	96.9% { 89.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 436720	(7.96, N/A) (N/A, -0.05, N/A)	732.1	N/A	1.0818 [1.0000]	108.2% { 105.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 337827	(9.41, N/A) (N/A, -0.04, N/A)	442.5	N/A	1.0584 [1.0000]	105.8% { 100.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1361944	(3.68, N/A) (N/A, 0.01, N/A)	762.8	N/A	7.7503 [8.0000]	96.9% { 108.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 736131	(4.99, N/A) (N/A, 0.01, N/A)	817.4	N/A	4.3825 [4.0000]	109.6% { 111.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 556950	(6.11, N/A) (N/A, -0.02, N/A)	642.8	N/A	2.0048 [2.0000]	100.2% { 105.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 522616	(7.03, N/A) (N/A, -0.04, N/A)	670.0	N/A	2.1565 [2.0000]	107.8% { 112.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 540602	(7.84, N/A) (N/A, -0.04, N/A)	604.6	N/A	2.1393 [2.0000]	107.0% { 105.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 216473	(8.58, N/A) (N/A, -0.05, N/A)	470.2	N/A	0.9687 [1.0000]	96.9% { 118.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 278745	(9.26, N/A) (N/A, -0.05, N/A)	453.4	N/A	1.0947 [1.0000]	109.5% { 111.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 372777	(9.70, N/A) (N/A, -0.02, N/A)	509.1	N/A	1.0292 [1.0000]	102.9% { 115.8% }			

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_EIS	(615.0 / 570.0) 385606	(9.88, N/A) (N/A, -0.02, N/A)	499.7	N/A	1.0667 [1.0000]	106.7% { 104.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 273135	(10.11, N/A) (N/A, -0.01, N/A)	481.6	N/A	1.1377 [1.0000]	113.8% { 98.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1382001	(6.07, N/A) (N/A, -0.02, N/A)	563.3	N/A	1.8717 [2.0000]	93.6% { 98.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 733558	(7.96, N/A) (N/A, -0.05, N/A)	746.5	N/A	1.8672 [2.0000]	93.4% { 106.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1082602	(9.41, N/A) (N/A, -0.05, N/A)	425.7	N/A	1.8672 [2.0000]	93.4% { 101.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 244732	(5.79, N/A) (N/A, -0.02, N/A)	584.4	N/A	3.9132 [4.0000]	97.8% { 108.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 304531	(7.50, N/A) (N/A, -0.04, N/A)	888.9	N/A	4.0445 [4.0000]	101.1% { 105.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 259002	(8.92, N/A) (N/A, -0.05, N/A)	486.1	N/A	3.4362 [4.0000]	85.9% { 115.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1586035	(10.16, N/A) (N/A, -0.02, N/A)	740.6	N/A	2.1641 [2.0000]	108.2% { 112.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 338029	(10.59, N/A) (N/A, -0.01, N/A)	824.1	N/A	2.1125 [2.0000]	105.6% { 99.7% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 307061	(10.68, N/A) (N/A, -0.01, N/A)	811.5	N/A	2.0787 [2.0000]	103.9% { 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
D3_MeFOSAA_EIS	(573.0 / 419.0) 546755	(9.47, N/A) (N/A, -0.04, N/A)	419.2	N/A	3.9657 [4.0000]	99.1% { 94.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 460120	(9.66, N/A) (N/A, -0.03, N/A)	379.8	N/A	3.7863 [4.0000]	94.7% { 101.9% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 477892	(10.56, N/A) (N/A, -0.01, N/A)	1218.0	N/A	21.2695 [20.0000]	106.3% { 101.9% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 213498	(10.65, N/A) (N/A, -0.01, N/A)	1094.1	N/A	20.8722 [20.0000]	104.4% { 97.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1239563	(6.45, N/A) (N/A, -0.03, N/A)	957.5	N/A	8.3923 [8.0000]	104.9% { 102.0% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	0.0321	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: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	8.32	ng/mL		
	13C5-PFPEA	4.24	ng/mL		
	13C5-PFHXA	2.07	ng/mL		
	13C4-PFHPA	2.02	ng/mL		
	13C8-PFOA	2.13	ng/mL		
	13C9-PFNA	0.922	ng/mL		
	13C6-PFDA	1.09	ng/mL		
	13C7-PFUnA	0.965	ng/mL		
	13C2-PFDOA	0.986	ng/mL		
	13C2-PFTEDA	0.969	ng/mL		
	13C3-PFBS	2.04	ng/mL		
	13C3-PFHXS	2.00	ng/mL		
	13C8-PFOS	2.15	ng/mL		
	13C2-4:2FTS	4.04	ng/mL		
	13C2-6:2FTS	4.06	ng/mL		
	13C2-8:2FTS	3.87	ng/mL		
	13C8-PFOSA	2.33	ng/mL		
	D5-NETFOSA	2.55	ng/mL		
	D3-NMEFOSA	2.35	ng/mL		
	D3-NMEFOSAA	4.80	ng/mL		
	D5-NETFOSAA	3.80	ng/mL		
	D7-NMEFOSE	23.3	ng/mL		
	D9-NETFOSAE	22.6	ng/mL		
	13C3-HFPO-DA	8.43	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (6)
 Acquired: 2022/12/21 - 19:44

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.: SB03942-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (6)
 Acquired: 2022/12/21 - 19:44

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) 19479 (499.0 / 99.0) 9410	(9.45 , 1.00) (0.00 , N/A , 1.5)	33.9 22.9	0.4831 198.6 225.0	0.0321	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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (6)
 Acquired: 2022/12/21 - 19:44

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			

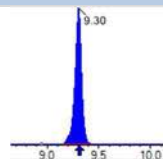
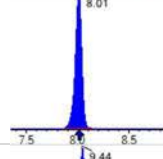
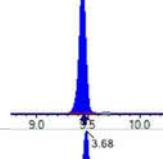
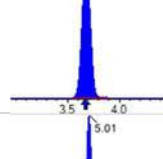
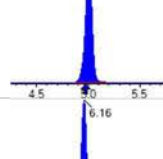
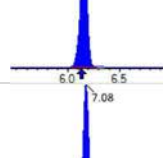
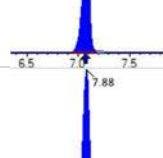
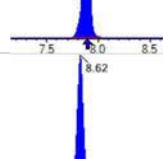
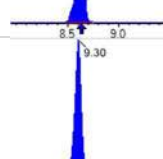
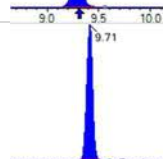



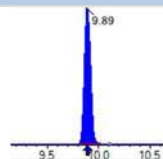
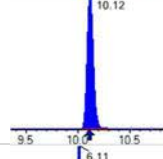
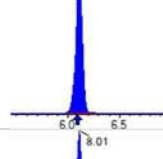
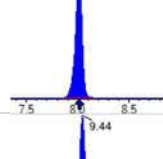
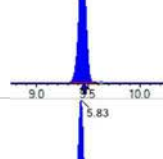
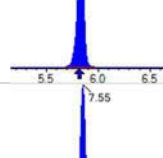
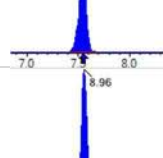
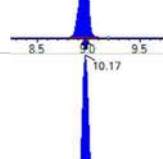
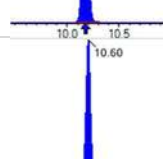
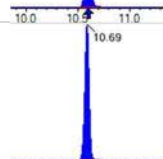

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (6)
 Acquired: 2022/12/21 - 19:44

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 143887	(3.68, N/A) (N/A, 0.01, N/A)	695.3	N/A	1.0337 [1.0000]	103.4% { 88.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 223621	(6.16, N/A) (N/A, 0.02, N/A)	391.0	N/A	0.9684 [1.0000]	96.8% { 100.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 216490	(7.88, N/A) (N/A, 0.00, N/A)	564.3	N/A	0.9847 [1.0000]	98.5% { 88.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 190613	(8.62, N/A) (N/A, 0.00, N/A)	334.1	N/A	1.0293 [1.0000]	102.9% { 105.7% }			

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_IIS	(515.1 / 470.1) 196423	(9.30, N/A) (N/A, -0.01, N/A)	425.7	N/A	1.0628 [1.0000]	106.3% { 98.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 413568	(8.01, N/A) (N/A, 0.00, N/A)	810.6	N/A	1.0244 [1.0000]	102.4% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 302782	(9.44, N/A) (N/A, -0.01, N/A)	418.5	N/A	0.9486 [1.0000]	94.9% { 89.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1232006	(3.68, N/A) (N/A, 0.01, N/A)	739.7	N/A	8.3193 [8.0000]	104.0% { 98.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 660256	(5.01, N/A) (N/A, 0.03, N/A)	700.0	N/A	4.2435 [4.0000]	106.1% { 99.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 532778	(6.16, N/A) (N/A, 0.02, N/A)	558.1	N/A	2.0704 [2.0000]	103.5% { 101.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 453864	(7.08, N/A) (N/A, 0.01, N/A)	546.0	N/A	2.0217 [2.0000]	101.1% { 97.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 505212	(7.88, N/A) (N/A, 0.00, N/A)	698.6	N/A	2.1280 [2.0000]	106.4% { 98.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 193237	(8.62, N/A) (N/A, -0.01, N/A)	586.2	N/A	0.9219 [1.0000]	92.2% { 105.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 305354	(9.30, N/A) (N/A, -0.01, N/A)	459.0	N/A	1.0930 [1.0000]	109.3% { 121.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 383541	(9.71, N/A) (N/A, 0.00, N/A)	316.6	N/A	0.9652 [1.0000]	96.5% { 119.2% }			

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_EIS	(615.0 / 570.0) 391164	(9.89, N/A) (N/A, -0.01, N/A)	474.7	N/A	0.9863 [1.0000]	98.6% { 106.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 255263	(10.12, N/A) (N/A, 0.00, N/A)	483.4	N/A	0.9691 [1.0000]	96.9% { 92.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1424441	(6.11, N/A) (N/A, 0.02, N/A)	637.7	N/A	2.0371 [2.0000]	101.9% { 101.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 744630	(8.01, N/A) (N/A, 0.00, N/A)	731.1	N/A	2.0015 [2.0000]	100.1% { 107.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1117331	(9.44, N/A) (N/A, -0.01, N/A)	561.0	N/A	2.1502 [2.0000]	107.5% { 105.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 239435	(5.83, N/A) (N/A, 0.03, N/A)	715.1	N/A	4.0429 [4.0000]	101.1% { 106.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 289587	(7.55, N/A) (N/A, 0.00, N/A)	733.5	N/A	4.0613 [4.0000]	101.5% { 100.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 276487	(8.96, N/A) (N/A, 0.00, N/A)	540.3	N/A	3.8735 [4.0000]	96.8% { 122.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1530890	(10.17, N/A) (N/A, 0.00, N/A)	879.8	N/A	2.3306 [2.0000]	116.5% { 108.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 337562	(10.60, N/A) (N/A, -0.01, N/A)	848.9	N/A	2.3537 [2.0000]	117.7% { 99.6% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 337642	(10.69, N/A) (N/A, -0.01, N/A)	1405.1	N/A	2.5503 [2.0000]	127.5% { 112.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (6)
 Acquired: 2022/12/21 - 19:44

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) 593336	(9.50, N/A) (N/A, 0.00, N/A)	285.1	N/A	4.8017 [4.0000]	120.0% { 102.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 413818	(9.68, N/A) (N/A, 0.00, N/A)	311.1	N/A	3.7994 [4.0000]	95.0% { 91.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 469973	(10.57, N/A) (N/A, -0.01, N/A)	919.2	N/A	23.3381 [20.0000]	116.7% { 100.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 207461	(10.66, N/A) (N/A, -0.01, N/A)	1071.9	N/A	22.6297 [20.0000]	113.1% { 94.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1153541	(6.50, N/A) (N/A, 0.01, N/A)	664.8	N/A	8.4311 [8.0000]	105.4% { 94.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	0.0125	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: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	8.19	ng/mL		
	13C5-PFPEA	4.30	ng/mL		
	13C5-PFHXA	1.98	ng/mL		
	13C4-PFHPA	1.88	ng/mL		
	13C8-PFOA	2.17	ng/mL		
	13C9-PFNA	1.05	ng/mL		
	13C6-PFDA	1.02	ng/mL		
	13C7-PFUnA	0.919	ng/mL		
	13C2-PFDOA	0.942	ng/mL		
	13C2-PFTEDA	1.05	ng/mL		
	13C3-PFBS	2.06	ng/mL		
	13C3-PFHXS	1.92	ng/mL		
	13C8-PFOS	1.88	ng/mL		
	13C2-4:2FTS	4.16	ng/mL		
	13C2-6:2FTS	4.24	ng/mL		
	13C2-8:2FTS	3.33	ng/mL		
	13C8-PFOSA	2.13	ng/mL		
	D5-NETFOSA	2.18	ng/mL		
	D3-NMEFOSA	2.12	ng/mL		
	D3-NMEFOSAA	4.41	ng/mL		
	D5-NETFOSAA	4.26	ng/mL		
	D7-NMEFOSE	22.8	ng/mL		
	D9-NETFOSAE	22.8	ng/mL		
	13C3-HFPO-DA	8.18	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (31)
 Acquired: 2022/12/22 - 01:01

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.: SB03942-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (31)
 Acquired: 2022/12/22 - 01:01

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) 7662 (499.0 / 99.0) 1686	(9.44 , 1.00) (-0.01 , N/A , 0.7)	29.5 27.2	0.2200 90.5 102.5	0.0125	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.: SB03942-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (31)
 Acquired: 2022/12/22 - 01:01

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			

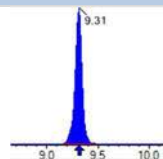
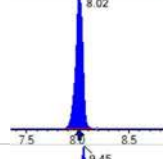
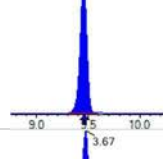
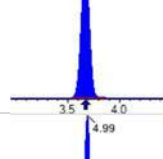
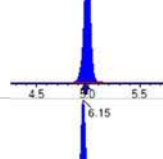
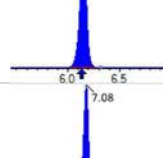
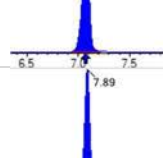
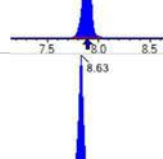
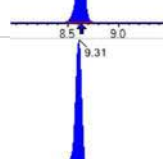
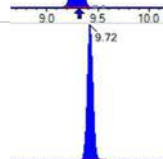



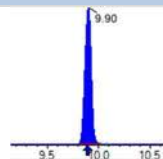
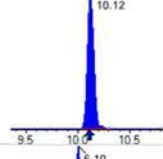
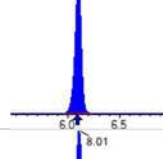
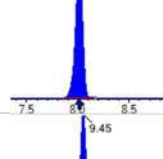
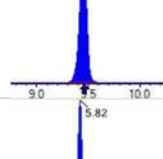
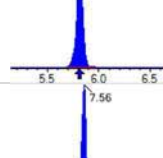
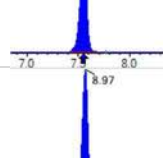
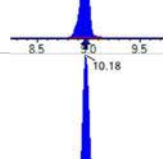
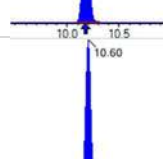
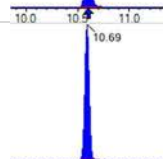

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (31)
 Acquired: 2022/12/22 - 01:01

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 147658	(3.67, N/A) (N/A, 0.00, N/A)	742.3	N/A	1.0608 [1.0000]	106.1% { 90.6% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 235193	(6.15, N/A) (N/A, 0.01, N/A)	642.5	N/A	1.0185 [1.0000]	101.9% { 105.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 213398	(7.89, N/A) (N/A, 0.00, N/A)	702.0	N/A	0.9707 [1.0000]	97.1% { 87.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 183484	(8.63, N/A) (N/A, 0.00, N/A)	565.2	N/A	0.9908 [1.0000]	99.1% { 101.8% }			

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) 190729	(9.31, N/A) (N/A, 0.00, N/A)	459.5	N/A	1.0320 [1.0000]	103.2% { 95.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 419632	(8.02, N/A) (N/A, 0.00, N/A)	767.5	N/A	1.0394 [1.0000]	103.9% { 101.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 349264	(9.45, N/A) (N/A, 0.00, N/A)	471.8	N/A	1.0943 [1.0000]	109.4% { 103.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1244599	(3.67, N/A) (N/A, 0.00, N/A)	878.8	N/A	8.1897 [8.0000]	102.4% { 99.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 703198	(4.99, N/A) (N/A, 0.02, N/A)	873.5	N/A	4.2971 [4.0000]	107.4% { 106.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 535139	(6.15, N/A) (N/A, 0.01, N/A)	695.9	N/A	1.9772 [2.0000]	98.9% { 101.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 443162	(7.08, N/A) (N/A, 0.01, N/A)	560.3	N/A	1.8769 [2.0000]	93.8% { 95.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 507238	(7.89, N/A) (N/A, 0.00, N/A)	901.2	N/A	2.1675 [2.0000]	108.4% { 99.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 211111	(8.63, N/A) (N/A, 0.00, N/A)	627.4	N/A	1.0463 [1.0000]	104.6% { 115.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 276057	(9.31, N/A) (N/A, 0.00, N/A)	464.9	N/A	1.0177 [1.0000]	101.8% { 110.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 354738	(9.72, N/A) (N/A, 0.00, N/A)	610.1	N/A	0.9194 [1.0000]	91.9% { 110.2% }			

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_EIS	(615.0 / 570.0) 362823	(9.90, N/A) (N/A, 0.00, N/A)	596.0	N/A	0.9421 [1.0000]	94.2% { 98.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 269584	(10.12, N/A) (N/A, 0.00, N/A)	533.7	N/A	1.0540 [1.0000]	105.4% { 97.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1464075	(6.10, N/A) (N/A, 0.01, N/A)	867.5	N/A	2.0636 [2.0000]	103.2% { 104.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 726152	(8.01, N/A) (N/A, 0.00, N/A)	904.5	N/A	1.9236 [2.0000]	96.2% { 104.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1126362	(9.45, N/A) (N/A, 0.00, N/A)	742.2	N/A	1.8791 [2.0000]	94.0% { 105.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 250171	(5.82, N/A) (N/A, 0.02, N/A)	671.2	N/A	4.1631 [4.0000]	104.1% { 111.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 306761	(7.56, N/A) (N/A, 0.01, N/A)	705.3	N/A	4.2400 [4.0000]	106.0% { 106.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 241109	(8.97, N/A) (N/A, 0.01, N/A)	455.9	N/A	3.3291 [4.0000]	83.2% { 107.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1612590	(10.18, N/A) (N/A, 0.00, N/A)	813.8	N/A	2.1283 [2.0000]	106.4% { 113.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 350295	(10.60, N/A) (N/A, 0.00, N/A)	1153.7	N/A	2.1174 [2.0000]	105.9% { 103.3% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 333388	(10.69, N/A) (N/A, -0.01, N/A)	1249.2	N/A	2.1830 [2.0000]	109.2% { 110.5% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (31)
 Acquired: 2022/12/22 - 01:01

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) 628747	(9.50 , N/A) (N/A , 0.00 , N/A)	396.7	N/A	4.4111 [4.0000]	110.3% { 108.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 534795	(9.68 , N/A) (N/A , 0.00 , N/A)	377.8	N/A	4.2567 [4.0000]	106.4% { 118.4% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 528718	(10.57 , N/A) (N/A , 0.00 , N/A)	1000.5	N/A	22.7610 [20.0000]	113.8% { 112.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 240978	(10.66 , N/A) (N/A , 0.00 , N/A)	1257.8	N/A	22.7873 [20.0000]	113.9% { 110.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1177226	(6.50 , N/A) (N/A , 0.01 , N/A)	696.0	N/A	8.1809 [8.0000]	102.3% { 96.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	0.0194	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: SB03942
 Calibration: 2252011

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03942-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	8.01	ng/mL		
	13C5-PFPEA	4.76	ng/mL		
	13C5-PFHXA	2.35	ng/mL		
	13C4-PFHPA	2.32	ng/mL		
	13C8-PFOA	1.91	ng/mL		
	13C9-PFNA	0.913	ng/mL		
	13C6-PFDA	1.02	ng/mL		
	13C7-PFUnA	0.973	ng/mL		
	13C2-PFDOA	1.19	ng/mL		
	13C2-PFTEDA	1.28	ng/mL		
	13C3-PFBS	1.92	ng/mL		
	13C3-PFHXS	1.89	ng/mL		
	13C8-PFOS	2.02	ng/mL		
	13C2-4:2FTS	4.32	ng/mL		
	13C2-6:2FTS	4.69	ng/mL		
	13C2-8:2FTS	4.32	ng/mL		
	13C8-PFOSA	2.13	ng/mL		
	D5-NETFOSA	2.42	ng/mL		
	D3-NMEFOSA	2.38	ng/mL		
	D3-NMEFOSAA	4.40	ng/mL		
	D5-NETFOSAA	4.63	ng/mL		
	D7-NMEFOSE	24.4	ng/mL		
	D9-NETFOSAE	22.9	ng/mL		
	13C3-HFPO-DA	9.62	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (41)
 Acquired: 2022/12/22 - 03:34

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.: SB03942-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (41)
 Acquired: 2022/12/22 - 03:34

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) 11221 (499.0 / 99.0) 2306	(9.40 , 1.00) (0.00 , N/A , -0.1)	31.7 24.5	0.2055 84.5 95.7	0.0194	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.: SB03942-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (41)
 Acquired: 2022/12/22 - 03:34

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			

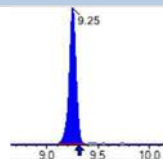
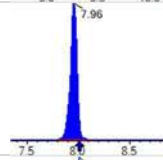
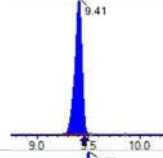
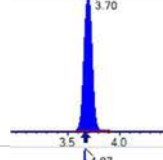
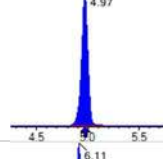
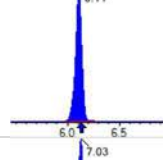
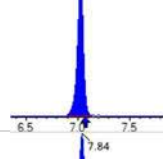
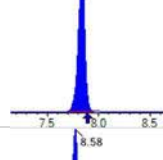
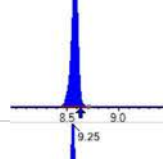
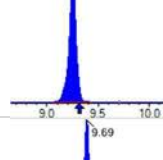
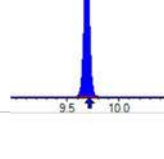


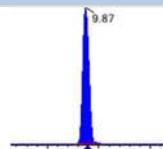
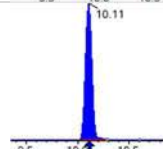
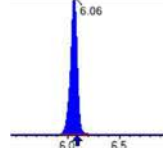
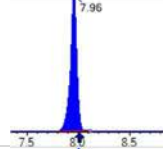
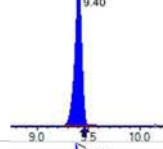
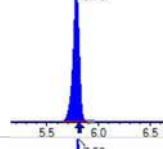
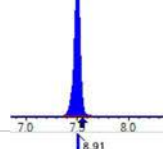
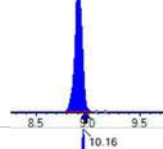
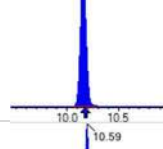
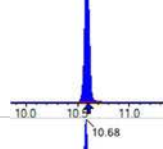
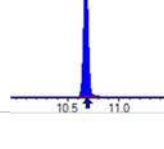
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (41)
 Acquired: 2022/12/22 - 03:34

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 157754	(3.70, N/A) (N/A, 0.03, N/A)	663.7	N/A	1.1333 [1.0000]	113.3% { 96.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 207195	(6.11, N/A) (N/A, -0.03, N/A)	509.9	N/A	0.8973 [1.0000]	89.7% { 92.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 242858	(7.84, N/A) (N/A, -0.05, N/A)	616.0	N/A	1.1047 [1.0000]	110.5% { 99.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 214002	(8.57, N/A) (N/A, -0.05, N/A)	372.1	N/A	1.1556 [1.0000]	115.6% { 118.7% }			

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_IIS	(515.1 / 470.1) 175025	(9.25, N/A) (N/A, -0.06, N/A)	267.7	N/A	0.9471 [1.0000]	94.7% { 87.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 408336	(7.96, N/A) (N/A, -0.05, N/A)	768.3	N/A	1.0115 [1.0000]	101.1% { 98.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 307913	(9.41, N/A) (N/A, -0.05, N/A)	470.0	N/A	0.9647 [1.0000]	96.5% { 91.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1300208	(3.70, N/A) (N/A, 0.03, N/A)	721.1	N/A	8.0080 [8.0000]	100.1% { 103.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 686645	(4.97, N/A) (N/A, 0.00, N/A)	815.3	N/A	4.7629 [4.0000]	119.1% { 103.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 559362	(6.11, N/A) (N/A, -0.02, N/A)	696.7	N/A	2.3460 [2.0000]	117.3% { 106.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 482654	(7.03, N/A) (N/A, -0.04, N/A)	463.0	N/A	2.3204 [2.0000]	116.0% { 103.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 508172	(7.84, N/A) (N/A, -0.05, N/A)	663.7	N/A	1.9080 [2.0000]	95.4% { 99.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 214906	(8.58, N/A) (N/A, -0.05, N/A)	559.1	N/A	0.9132 [1.0000]	91.3% { 117.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 255023	(9.25, N/A) (N/A, -0.06, N/A)	370.1	N/A	1.0245 [1.0000]	102.4% { 101.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 344563	(9.69, N/A) (N/A, -0.03, N/A)	517.0	N/A	0.9731 [1.0000]	97.3% { 107.1% }			

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) 422314	(9.87, N/A) (N/A, -0.03, N/A)	687.7	N/A	1.1950 [1.0000]	119.5% { 114.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 299384	(10.11, N/A) (N/A, -0.01, N/A)	552.5	N/A	1.2756 [1.0000]	127.6% { 108.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1327330	(6.06, N/A) (N/A, -0.02, N/A)	669.1	N/A	1.9226 [2.0000]	96.1% { 94.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 694377	(7.96, N/A) (N/A, -0.05, N/A)	681.3	N/A	1.8903 [2.0000]	94.5% { 100.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1065070	(9.40, N/A) (N/A, -0.05, N/A)	405.2	N/A	2.0154 [2.0000]	100.8% { 100.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 252658	(5.78, N/A) (N/A, -0.02, N/A)	597.8	N/A	4.3208 [4.0000]	108.0% { 112.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 330434	(7.50, N/A) (N/A, -0.04, N/A)	757.4	N/A	4.6936 [4.0000]	117.3% { 114.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 304104	(8.91, N/A) (N/A, -0.05, N/A)	430.7	N/A	4.3150 [4.0000]	107.9% { 135.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1421143	(10.16, N/A) (N/A, -0.02, N/A)	866.6	N/A	2.1275 [2.0000]	106.4% { 100.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 346527	(10.59, N/A) (N/A, -0.02, N/A)	855.2	N/A	2.3760 [2.0000]	118.8% { 102.2% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 325828	(10.68, N/A) (N/A, -0.02, N/A)	1086.7	N/A	2.4200 [2.0000]	121.0% { 108.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03942-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

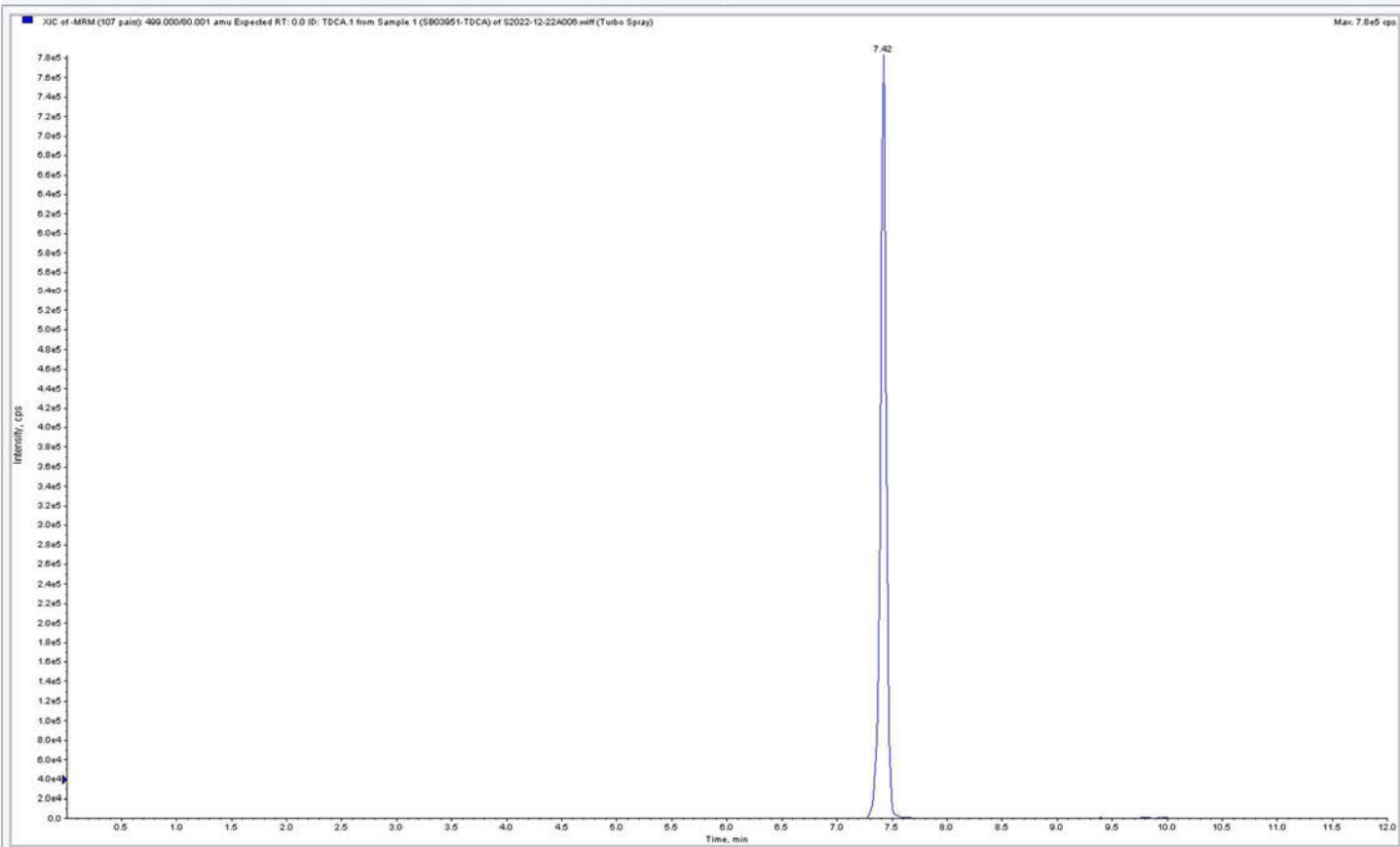
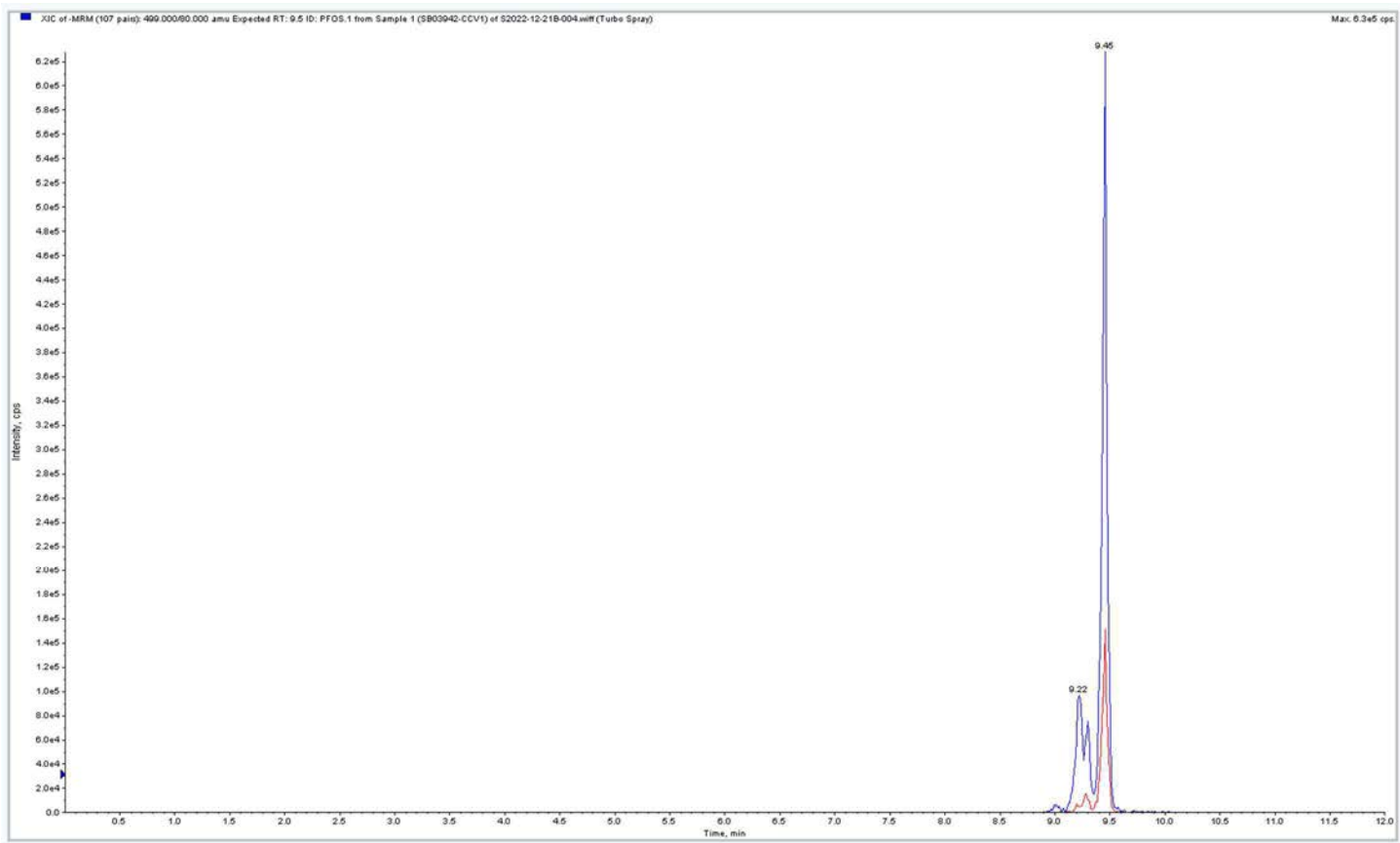
Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (41)
 Acquired: 2022/12/22 - 03:34

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) 553459	(9.45, N/A) (N/A, -0.05, N/A)	391.6	N/A	4.4043 [4.0000]	110.1% { 95.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 512920	(9.65, N/A) (N/A, -0.03, N/A)	558.1	N/A	4.6309 [4.0000]	115.8% { 113.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 498903	(10.55, N/A) (N/A, -0.02, N/A)	1356.8	N/A	24.3619 [20.0000]	121.8% { 106.4% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 213633	(10.65, N/A) (N/A, -0.01, N/A)	925.3	N/A	22.9145 [20.0000]	114.6% { 97.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1219902	(6.45, N/A) (N/A, -0.03, N/A)	737.7	N/A	9.6230 [8.0000]	120.3% { 100.4% }			

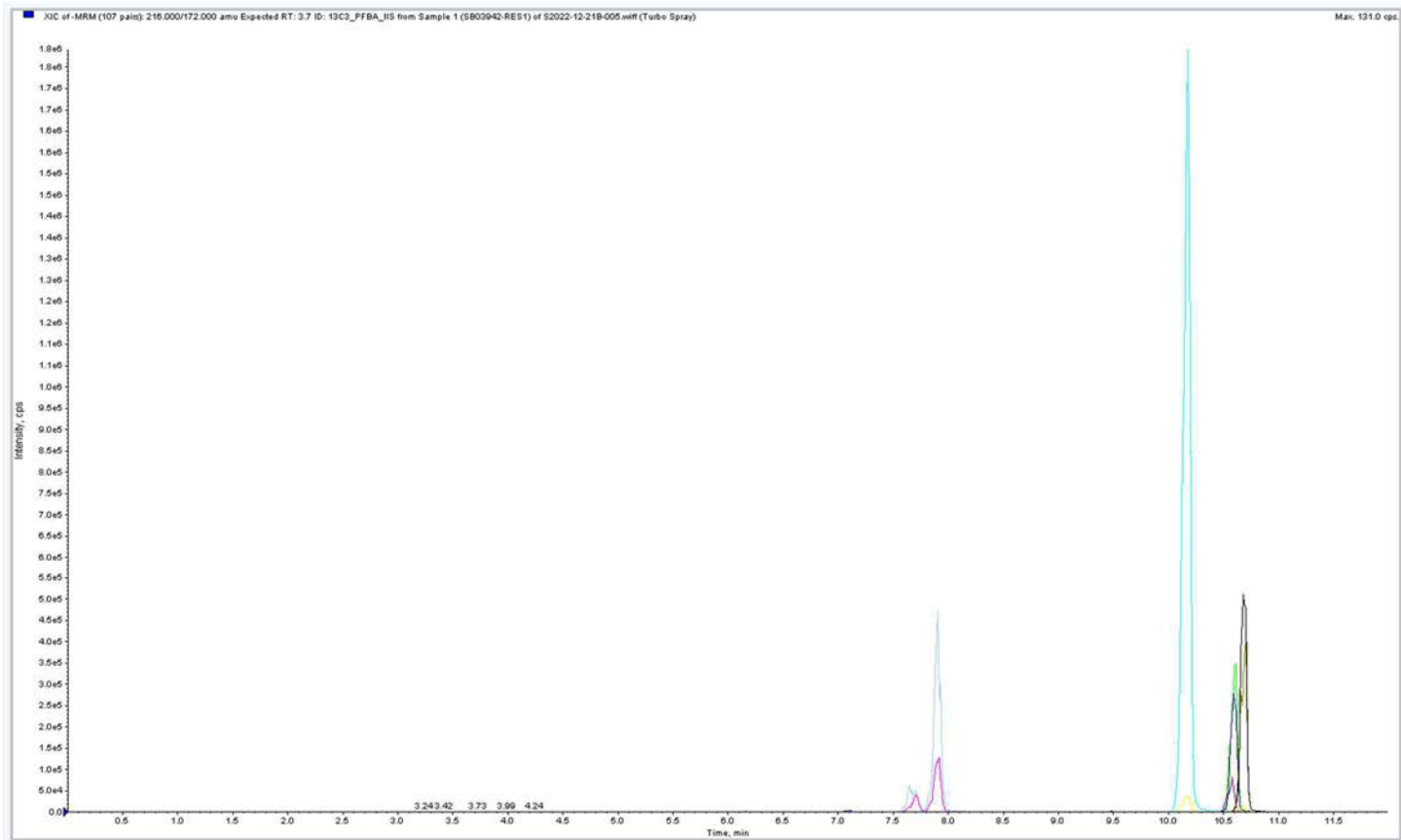
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BILE STANDARD CHECK S2022-12-21B/SB03942

TDCA = 7.42
PFOS = 9.00
TDCA-PFOS = 1.58 > 1.0 PASS



S2022-12-21B/SB03951 Column Resolution



QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	BBL0372-BLK1
Sampled:		Prepared:	12/19/22 12:22
Solids:		Preparation:	PFAS Leachates
Batch:	BBL0372	Sequence:	SB03942
Column:	1	Calibration:	2252011
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	4.0 U	8.0	4.0	1.0	U
PFPEA	4.0 U	4.0	4.0	0.32	U
PFHXA	2.0 U	2.0	2.0	0.28	U
PFHPA	1.0 U	2.0	1.0	0.20	U
PFOA	1.0 U	2.0	1.0	0.75	IR2, U
PFNA	1.0 U	2.0	1.0	0.41	U
PFDA	1.0 U	2.0	1.0	0.50	U
PFUnA	1.0 U	2.0	1.0	0.80	U
PFDOA	1.0 U	2.0	1.0	0.55	U
PFTRDA	1.5 U	2.0	1.5	1.0	U
PFTEDA	1.0 U	2.0	1.0	1.0	U
PFBS	1.0 U	2.0	1.0	0.18	U
PFPEs	1.0 U	2.0	1.0	0.32	U
PFHXS	1.0 U	2.0	1.0	0.16	U
PFHPS	1.0 U	2.0	1.0	0.26	U
PFOS	0.604 J	2.0	1.0	0.32	J
PFNS	1.0 U	2.0	1.0	0.60	U
PFDS	1.0 U	2.0	1.0	0.75	U
PFDOS	1.0 U	2.0	1.0	0.60	U
4:2FTS	4.0 U	8.0	4.0	1.4	U
6:2FTS	4.0 U	8.0	4.0	1.6	U
8:2FTS	4.0 U	8.0	4.0	0.41	U
PFOSA	1.0 U	2.0	1.0	0.50	U
NMeFOSA	4.0 U	8.0	4.0	2.4	U
NEtFOSA	4.0 U	8.0	4.0	2.0	U
NMeFOSAA	1.0 U	2.0	1.0	0.55	U
NEtFOSAA	1.0 U	2.0	1.0	0.55	U
NMeFOSE	6.0 U	8.0	6.0	5.0	U
NEtFOSE	6.0 U	8.0	6.0	5.0	U
HFPO-DA	2.0 U	4.0	2.0	0.85	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	BBL0372-BLK1
Sampled:		File ID:	S2022-12-21B (7)
		Prepared:	12/19/22 12:22
Solids:		Analyzed:	12/21/22 19:57
		Preparation:	PFAS Leachates
Batch:	BBL0372	Dilution:	1
Column:	1	Sequence:	SB03942
		Calibration:	2252011
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	2.0 U	4.0	2.0	0.60	U
PFEESA	2.0 U	4.0	2.0	0.55	U
PFMPA	2.0 U	4.0	2.0	0.27	U
PFMBA	2.0 U	4.0	2.0	0.46	U
NFDHA	2.0 U	4.0	2.0	1.5	U
9CL-PF3ONS	2.0 U	4.0	2.0	1.0	U
11CL-PF3OUDS	2.0 U	4.0	2.0	1.0	U
3:3FTCA	4.0 U	8.0	4.0	2.8	U
5:3FTCA	4.0 U	8.0	4.0	2.2	U
7:3FTCA	4.0 U	8.0	4.0	2.8	U



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0372-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (7)
 Acquired: 2022/12/21 - 19:57

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) 6785 (413.0 / 169.0) 3550	(7.87, 1.00) (0.00, N/A, 0.0)	21.9 39.3	0.5233 160.1 159.1	0.0244	N/A			IR2,
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.: BBL0372-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (7)
 Acquired: 2022/12/21 - 19:57

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) 18203 (499.0 / 99.0) 3300	(9.44 , 1.00) (0.01 , N/A , 0.3)	22.2 14.6	0.1813 74.6 84.4	0.0302	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.: BBL0372-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (7)
 Acquired: 2022/12/21 - 19:57

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			

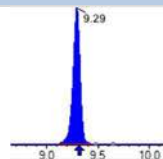
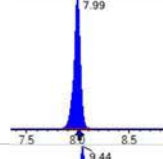
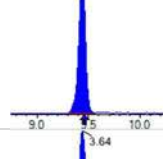
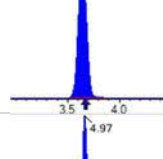
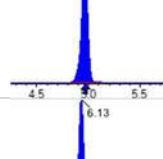
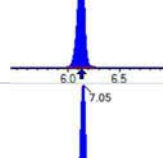
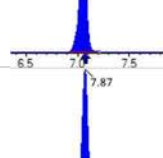
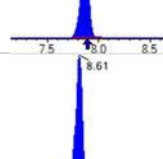
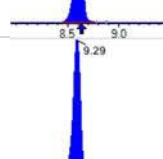
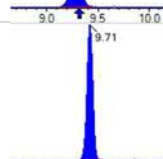



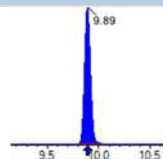
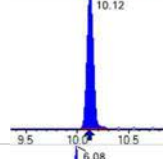
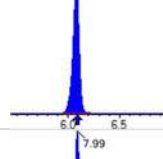
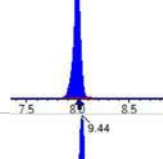
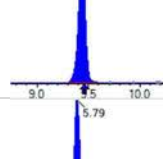
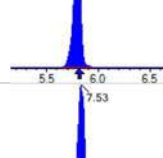
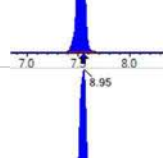
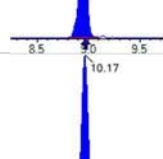
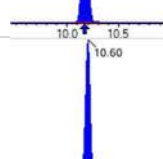
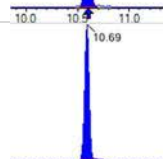

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

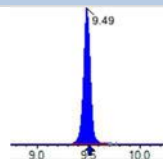
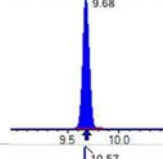
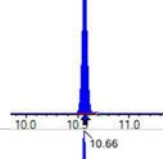
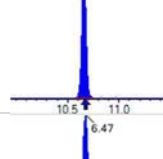
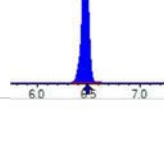
Sample I.D.: BBL0372-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-21.dam

Quant Method: 1633 - S2022-12-21A
 Path: S2022-12-21B (7)
 Acquired: 2022/12/21 - 19:57

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	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 191074	(3.65, N/A) (N/A, -0.02, N/A)	637.8	N/A	1.3727 [1.0000]	137.3% { 117.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 315076	(6.13, N/A) (N/A, -0.01, N/A)	468.0	N/A	1.3644 [1.0000]	136.4% { 141.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 300927	(7.87, N/A) (N/A, -0.02, N/A)	639.1	N/A	1.3688 [1.0000]	136.9% { 123.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 253692	(8.61, N/A) (N/A, -0.02, N/A)	657.1	N/A	1.3700 [1.0000]	137.0% { 140.7% }			

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_IIS	(515.1 / 470.1) 231401	(9.29, N/A) (N/A, -0.02, N/A)	323.6	N/A	1.2521 [1.0000]	125.2% { 115.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 536456	(7.99, N/A) (N/A, -0.02, N/A)	945.2	N/A	1.3288 [1.0000]	132.9% { 129.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 427065	(9.44, N/A) (N/A, -0.01, N/A)	314.4	N/A	1.3380 [1.0000]	133.8% { 126.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1485899	(3.64, N/A) (N/A, -0.02, N/A)	829.0	N/A	7.5558 [8.0000]	94.4% { 118.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 795800	(4.97, N/A) (N/A, -0.01, N/A)	823.1	N/A	3.6300 [4.0000]	90.8% { 120.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 633454	(6.13, N/A) (N/A, -0.01, N/A)	663.4	N/A	1.7471 [2.0000]	87.4% { 120.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 545278	(7.05, N/A) (N/A, -0.02, N/A)	539.6	N/A	1.7239 [2.0000]	86.2% { 117.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 565376	(7.87, N/A) (N/A, -0.02, N/A)	811.1	N/A	1.7132 [2.0000]	85.7% { 110.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 211362	(8.61, N/A) (N/A, -0.02, N/A)	455.8	N/A	0.7577 [1.0000]	75.8% { 115.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 284249	(9.29, N/A) (N/A, -0.02, N/A)	451.1	N/A	0.8637 [1.0000]	86.4% { 113.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 312866	(9.71, N/A) (N/A, 0.00, N/A)	408.8	N/A	0.6683 [1.0000]	66.8% { 97.2% }			

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_EIS	(615.0 / 570.0) 359372	(9.89, N/A) (N/A, -0.01, N/A)	631.1	N/A	0.7691 [1.0000]	76.9% { 97.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 255620	(10.12, N/A) (N/A, 0.00, N/A)	419.2	N/A	0.8238 [1.0000]	82.4% { 92.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1641989	(6.08, N/A) (N/A, -0.01, N/A)	751.5	N/A	1.8103 [2.0000]	90.5% { 116.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 791961	(7.99, N/A) (N/A, -0.02, N/A)	918.1	N/A	1.6411 [2.0000]	82.1% { 114.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1110203	(9.44, N/A) (N/A, -0.02, N/A)	397.9	N/A	1.5147 [2.0000]	75.7% { 104.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 252530	(5.79, N/A) (N/A, -0.01, N/A)	693.8	N/A	3.2872 [4.0000]	82.2% { 112.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 272124	(7.53, N/A) (N/A, -0.02, N/A)	912.0	N/A	2.9422 [4.0000]	73.6% { 94.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 295396	(8.95, N/A) (N/A, -0.02, N/A)	457.1	N/A	3.1904 [4.0000]	79.8% { 131.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1442258	(10.17, N/A) (N/A, -0.01, N/A)	957.2	N/A	1.5567 [2.0000]	77.8% { 101.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 100919	(10.60, N/A) (N/A, -0.01, N/A)	417.7	N/A	0.4989 [2.0000]	24.9% { 29.8% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 80705	(10.69, N/A) (N/A, -0.01, N/A)	880.4	N/A	0.4322 [2.0000]	21.6% { 26.8% }			

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) 547912	(9.49, N/A) (N/A, -0.02, N/A)	315.7	N/A	3.1437 [4.0000]	78.6% { 94.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 523431	(9.68, N/A) (N/A, -0.01, N/A)	552.7	N/A	3.4073 [4.0000]	85.2% { 115.9% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 268251	(10.57, N/A) (N/A, 0.00, N/A)	870.3	N/A	9.4443 [20.0000]	47.2% { 57.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 106668	(10.66, N/A) (N/A, -0.01, N/A)	1059.5	N/A	8.2491 [20.0000]	41.2% { 48.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1292001	(6.47, N/A) (N/A, -0.01, N/A)	719.2	N/A	6.7021 [8.0000]	83.8% { 106.3% }			

ANALYSIS DATA SHEET

LCS

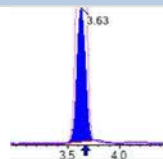
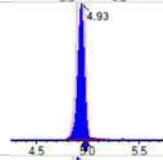
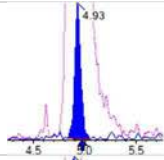
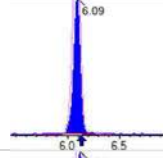
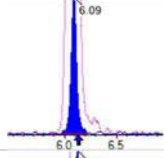
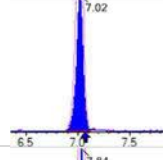
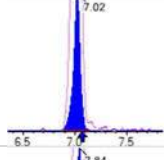
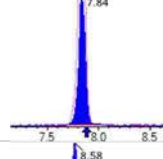
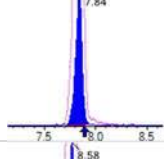
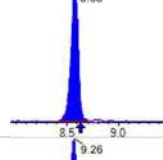
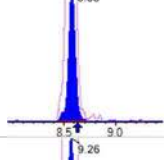
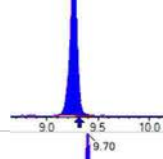
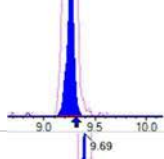
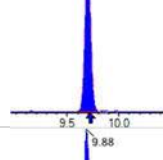
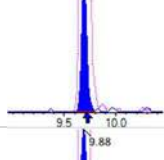
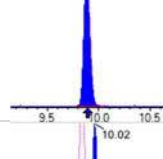
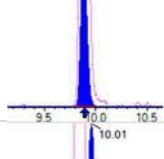
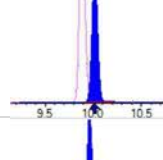
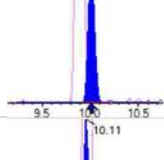
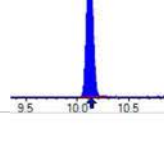
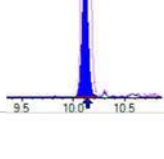
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Matrix:	Solid	Laboratory ID:	BBL0372-BS1
Sampled:		File ID:	S2022-12-21B (8)
		Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 20:09
Solids:		Preparation:	PFAS Leachates
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Batch:	BBL0372	Sequence:	SB03942
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Column:	1		

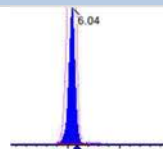
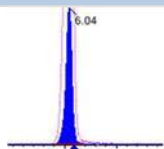
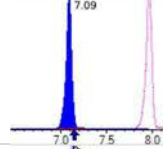
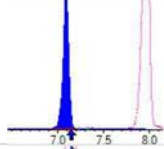
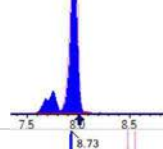
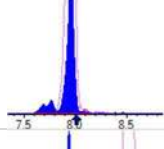
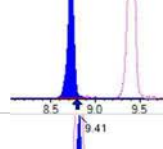
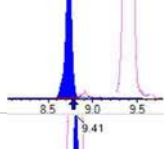
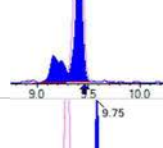
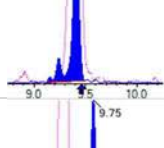
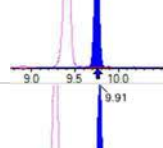
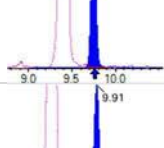
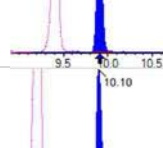
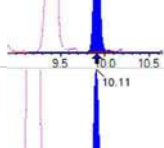
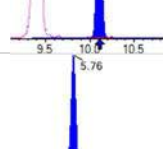
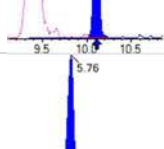
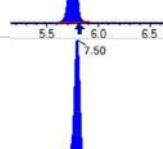
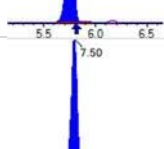
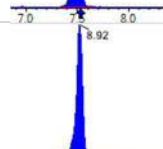
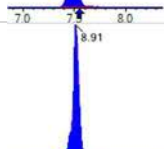

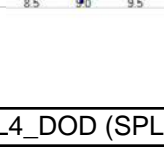
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	79.8	8.0	1.0	
PFPEA	39.7	4.0	0.32	
PFHXA	20.9	2.0	0.28	
PFHPA	19.3	2.0	0.20	
PFOA	19.6	2.0	0.75	
PFNA	21.7	2.0	0.41	
PFDA	19.3	2.0	0.50	
PFUnA	19.4	2.0	0.80	
PFDOA	21.4	2.0	0.55	
PFTRDA	20.5	2.0	1.0	
PFTEDA	21.9	2.0	1.0	
PFBS	18.7	2.0	0.18	
PFPEs	20.5	2.0	0.32	
PFHXS	19.1	2.0	0.16	
PFHPS	21.1	2.0	0.26	
PFOS	19.8	2.0	0.32	
PFNS	19.3	2.0	0.60	
PFDS	19.0	2.0	0.75	
PFDOS	20.3	2.0	0.60	
4:2FTS	76.8	8.0	1.4	
6:2FTS	81.0	8.0	1.6	
8:2FTS	77.3	8.0	0.41	
PFOSA	20.5	2.0	0.50	
NMeFOSA	87.1	8.0	2.4	
NEtFOSA	91.7	8.0	2.0	
NMeFOSAA	23.5	2.0	0.55	
NEtFOSAA	23.3	2.0	0.55	
NMeFOSE	71.2	8.0	5.0	
NEtFOSE	58.1	8.0	5.0	
HFPO-DA	37.4	4.0	0.85	

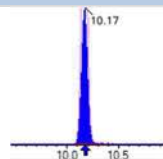
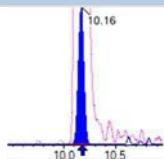
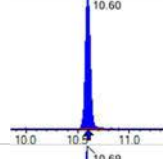
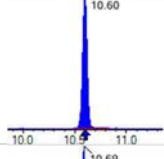
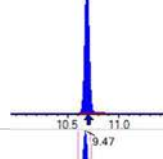
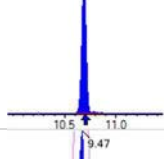
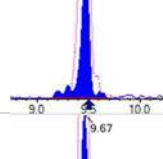
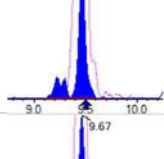
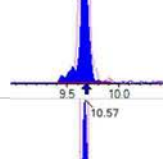
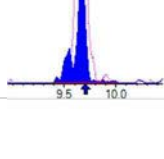
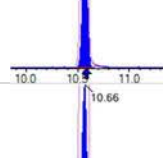
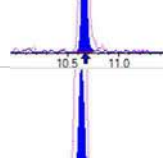
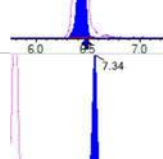
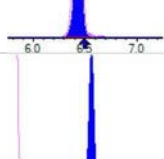
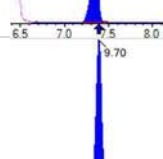
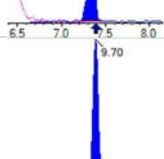
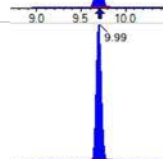
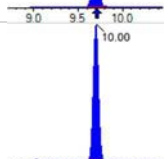
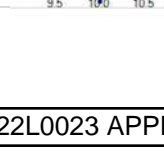
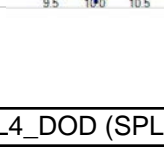
ANALYSIS DATA SHEET**LCS**

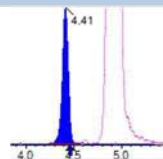
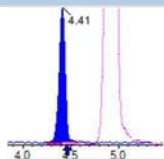
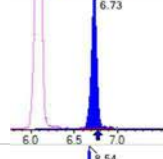
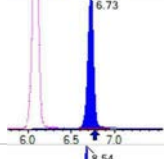
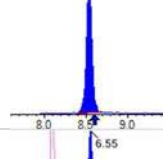
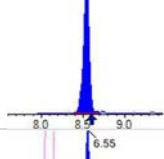
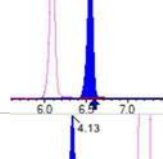
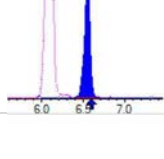
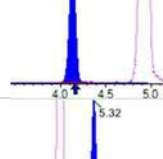
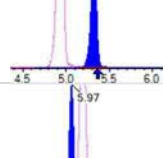
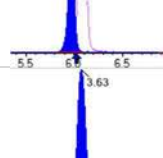
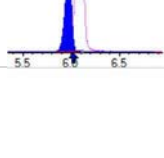
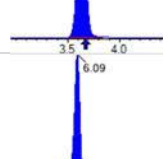
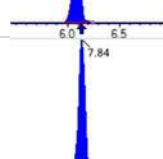
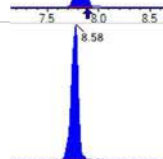

Laboratory:	APPL, LLC	Work Order:	22L0023
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	BBL0372-BS1
Sampled:		File ID:	S2022-12-21B (8)
		Prepared:	12/19/22 12:22
Solids:		Analyzed:	12/21/22 20:09
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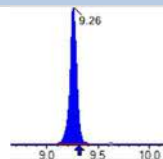
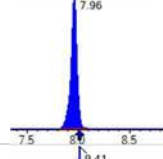
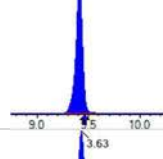
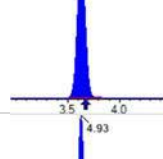
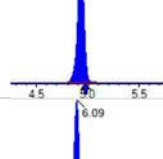
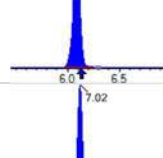
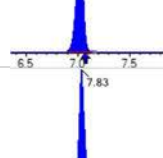
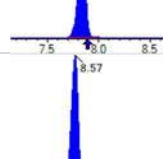
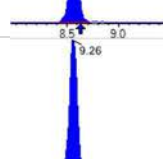
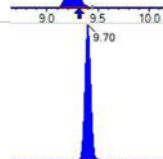

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	35.7	4.0	0.60	
PFEESA	36.6	4.0	0.55	
PFMPA	40.7	4.0	0.27	
PFMBA	36.6	4.0	0.46	
NFDHA	44.2	4.0	1.5	
9CL-PF3ONS	29.5	4.0	1.0	
11CL-PF3OUDS	29.1	4.0	1.0	
3:3FTCA	77.0	8.0	2.8	
5:3FTCA	80.7	8.0	2.2	
7:3FTCA	82.3	8.0	2.8	

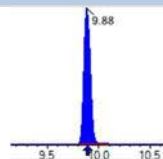
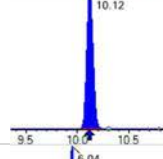
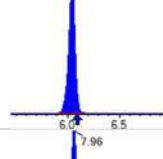
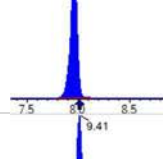
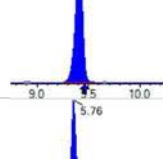
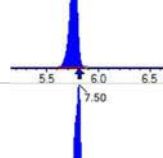
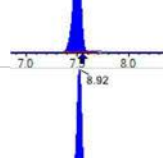
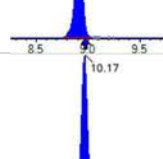
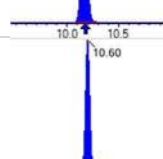
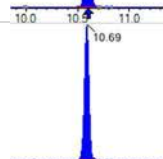

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 457768	(3.63, 1.00) (0.00, N/A, 0.0)	74.7	N/A 0.0 0.0	3.9896 [4.0000]	99.7%			
PFPeA	(262.9 / 219.0) 334815 (262.9 / 69.0) 3544	(4.93, 1.00) (0.00, N/A, 0.3)	738.9 91.6	0.0106 94.6 91.3	1.9863 [2.0000]	99.3%			
PFHxA	(313.0 / 269.0) 259860 (313.0 / 119.0) 25762	(6.09, 1.00) (0.00, N/A, 0.1)	380.9 185.3	0.0991 101.4 106.9	1.0466 [1.0000]	104.7%			
PFHpA	(363.0 / 319.0) 230144 (363.0 / 169.0) 70554	(7.02, 1.00) (0.00, N/A, -0.1)	360.3 305.9	0.3066 98.4 98.3	0.9674 [1.0000]	96.7%			
PFOA	(413.0 / 369.0) 259558 (413.0 / 169.0) 86753	(7.84, 1.00) (0.00, N/A, 0.0)	348.9 496.3	0.3342 102.3 101.6	0.9802 [1.0000]	98.0%			
PFNA	(463.0 / 419.0) 189733 (463.0 / 169.0) 42365	(8.58, 1.00) (0.00, N/A, 0.0)	262.8 135.3	0.2233 115.8 97.3	1.0861 [1.0000]	108.6%			
PFDA	(513.0 / 469.0) 239514 (513.0 / 169.0) 24027	(9.26, 1.00) (0.01, N/A, 0.0)	302.5 1095.8	0.1003 105.0 92.9	0.9648 [1.0000]	96.5%			
PFUnA	(563.0 / 519.0) 276442 (563.0 / 169.0) 20818	(9.70, 1.00) (0.00, N/A, 0.4)	418.0 154.3	0.0753 86.7 73.5	0.9683 [1.0000]	96.8%			
PFDoA	(613.0 / 569.0) 290888 (613.0 / 169.0) 34898	(9.88, 1.00) (0.00, N/A, -0.1)	582.0 106.4	0.1200 86.2 102.3	1.0706 [1.0000]	107.1%			
PFTrDA	(663.0 / 619.0) 241039 (663.0 / 169.0) 47278	(10.02, 1.01) (N/A, 0.00, 0.3)	523.4 417.5	0.1961 95.8 91.9	1.0239 [1.0000]	102.4%			
PFTeDA	(713.0 / 669.0) 201184 (713.0 / 169.0) 42373	(10.12, 1.00) (0.00, N/A, 0.4)	494.5 178.0	0.2106 103.6 119.8	1.0926 [1.0000]	109.3%			

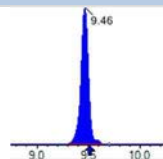
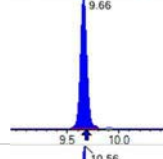
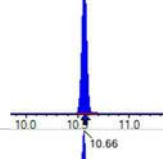
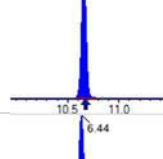
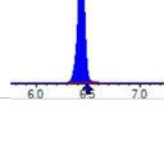
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 400509 (298.9 / 99.0) 250905	(6.04, 1.00) (0.00, N/A, -0.1)	698.3 508.0	0.6265 101.8 100.3	0.9373 [0.8847]	105.9%			
PFPeS	(349.0 / 80.0) 690858 (349.0 / 99.0) 246355	(7.09, 0.89) (N/A, -0.05, 0.0)	708.5 613.6	0.3566 100.2 104.0	1.0249 [0.9384]	109.2%			
PFHxS	(399.0 / 80.0) 560434 (399.0 / 99.0) 196306	(7.96, 1.00) (0.00, N/A, -0.1)	1934.2 36979.7	0.3503 104.2 103.1	0.9560 [0.9110]	104.9%			
PFHpS	(449.0 / 80.0) 464864 (449.0 / 99.0) 138540	(8.73, 0.93) (N/A, -0.06, -0.3)	453.1 492.0	0.2980 108.9 107.2	1.0570 [0.9514]	111.1%			
PFOS	(499.0 / 80.0) 540898 (499.0 / 99.0) 103881	(9.41, 1.00) (0.00, N/A, 0.1)	78.5 111.0	0.1921 79.0 89.5	0.9887 [0.9275]	106.6%			
PFNS	(549.0 / 80.0) 585171 (549.0 / 99.0) 159100	(9.75, 1.04) (N/A, -0.01, 0.4)	647.2 340.4	0.2719 111.4 108.9	0.9642 [0.9599]	100.5%			
PFDS	(599.0 / 80.0) 638836 (599.0 / 99.0) 160217	(9.91, 1.05) (N/A, -0.01, -0.1)	909.8 410.7	0.2508 111.4 120.9	0.9482 [0.9631]	98.5%			
PFDoS	(698.9 / 80.0) 285127 (698.9 / 99.0) 62736	(10.10, 1.07) (N/A, -0.01, -0.2)	725.1 272.3	0.2200 89.9 88.8	1.0126 [0.9696]	104.4%			
4:2FTS	(327.0 / 307.0) 808487 (327.0 / 81.0) 437740	(5.76, 1.00) (0.00, N/A, -0.2)	649.0 452.3	0.5414 109.6 104.9	3.8383 [3.7381]	102.7%			
6:2FTS	(427.0 / 407.0) 443299 (427.0 / 81.0) 334939	(7.50, 1.00) (-0.01, N/A, -0.1)	558.7 642.2	0.7556 97.1 116.7	4.0487 [3.7962]	106.7%			
8:2FTS	(527.0 / 507.0) 402499 (527.0 / 81.0) 259585	(8.92, 1.00) (0.00, N/A, 0.4)	388.4 506.0	0.6449 113.9 80.3	3.8667 [3.8332]	100.9%			

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) 675318 (498.0 / 478.0) 17173	(10.17, 1.00) (0.00, N/A, 0.3)	792.7 217.3	0.0254 122.0 108.5	1.0256 [1.0000]	102.6%			
NMeFOSA	(511.9 / 219.0) 159594 (511.9 / 169.0) 106866	(10.60, 1.00) (0.00, N/A, -0.1)	761.0 447.4	0.6696 93.0 103.8	4.3545 [4.0000]	108.9%			
NEIFOSA	(526.0 / 219.0) 139333 (526.0 / 169.0) 142928	(10.69, 1.00) (0.00, N/A, 0.0)	828.8 577.9	1.0258 97.0 100.8	4.5838 [4.0000]	114.6%			
NMeFOSAA	(570.0 / 419.0) 106989 (570.0 / 483.0) 57946	(9.47, 1.00) (0.01, N/A, 0.3)	158.5 1352.2	0.5416 88.1 112.3	1.1737 [1.0000]	117.4%			
NEIFOSAA	(584.0 / 419.0) 104671 (584.0 / 526.0) 63936	(9.67, 1.00) (0.01, N/A, -0.2)	295.0 8364.3	0.6108 83.3 97.9	1.1640 [1.0000]	116.4%			
NMeFOSE	(616.1 / 59.0) 51952	(10.57, 1.00) (0.01, N/A, 0.0)	559.5	N/A 0.0 0.0	3.5591 [4.0000]	89.0%			
NEtFOSE	(630.0 / 59.0) 7015	(10.66, 1.00) (0.01, N/A, 0.0)	184.9	N/A 0.0 0.0	2.9035 [4.0000]	72.6%			
HFPO-DA	(285.0 / 169.0) 186764 (285.0 / 185.0) 580133	(6.44, 1.00) (0.00, N/A, 0.0)	600.0 845.9	3.1062 113.2 108.4	1.8716 [2.0000]	93.6%			
ADONA	(377.0 / 85.0) 790625 (377.0 / 251.0) 105547	(7.34, 1.14) (N/A, -0.04, 0.2)	955.6 310.5	0.1335 107.2 96.4	1.7838 [1.8854]	94.6%			
9CI-Pf3ONS	(531.0 / 351.0) 1845709 (533.0 / 353.0) 568940	(9.70, 1.51) (N/A, -0.02, 0.2)	609.5 520.9	0.3083 104.2 98.8	1.4773 [1.8665]	79.1%			
11CI-PF3OUDS	(631.0 / 451.0) 900836 (633.0 / 453.0) 292329	(9.99, 1.55) (N/A, -0.01, -0.1)	477.9 465.2	0.3245 98.1 115.3	1.4542 [1.8864]	77.1%			

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) 22393 (241.0 / 117.0) 39244	(4.41, 0.89) (N/A, -0.04, 0.1)	474.7 281.2	1.7525 104.7 101.8	3.8493 [4.0000]	96.2%			
5:3FTCA	(341.0 / 236.7) 176959 (341.0 / 217.0) 283071	(6.73, 1.11) (N/A, -0.04, 0.2)	417.7 479.6	1.5996 109.3 103.3	4.0336 [4.0000]	100.8%			
7:3FTCA	(441.0 / 317.0) 207653 (441.0 / 337.0) 169239	(8.54, 1.40) (N/A, -0.05, -0.2)	367.4 284.8	0.8150 97.3 100.6	4.1136 [4.0000]	102.8%			
PFEESA	(315.0 / 135.0) 497621 (315.0 / 83.0) 135281	(6.55, 1.08) (N/A, -0.04, -0.1)	659.9 435.4	0.2719 88.6 91.3	1.8306 [1.7849]	102.6%			
PFMPA	(229.0 / 85.0) 94140	(4.13, 0.84) (N/A, -0.04, 0.0)	797.7	N/A 0.0 0.0	2.0349 [2.0000]	101.7%			
PFMBA	(279.0 / 85.0) 292798	(5.32, 1.08) (N/A, -0.04, 0.0)	745.0	N/A 0.0 0.0	1.8311 [2.0000]	91.6%			
NFDHA	(295.0 / 201.0) 276597 (295.0 / 85.0) 240325	(5.97, 0.98) (N/A, -0.04, 0.1)	606.9 700.7	0.8689 98.4 93.4	2.2093 [2.0000]	110.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 187938	(3.63, N/A) (N/A, -0.03, N/A)	629.6	N/A	1.3502 [1.0000]	135.0% {115.3%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 291882	(6.09, N/A) (N/A, -0.04, N/A)	458.8	N/A	1.2640 [1.0000]	126.4% {130.6%}			
13C4_PFOA_IIS	(417.0 / 372.0) 281582	(7.84, N/A) (N/A, -0.05, N/A)	703.1	N/A	1.2808 [1.0000]	128.1% {115.6%}			
13C5_PFNA_IIS	(468.0 / 423.0) 205985	(8.58, N/A) (N/A, -0.05, N/A)	389.2	N/A	1.1123 [1.0000]	111.2% {114.2%}			

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) 227056	(9.26, N/A) (N/A, -0.05, N/A)	274.0	N/A	1.2286 [1.0000]	122.9% { 113.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 515436	(7.96, N/A) (N/A, -0.05, N/A)	968.5	N/A	1.2768 [1.0000]	127.7% { 124.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 421087	(9.41, N/A) (N/A, -0.04, N/A)	742.7	N/A	1.3193 [1.0000]	131.9% { 124.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1407024	(3.63, N/A) (N/A, -0.03, N/A)	858.6	N/A	7.2741 [8.0000]	90.9% { 112.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 767699	(4.93, N/A) (N/A, -0.04, N/A)	826.1	N/A	3.7801 [4.0000]	94.5% { 115.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 578203	(6.09, N/A) (N/A, -0.05, N/A)	596.8	N/A	1.7214 [2.0000]	86.1% { 109.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 521986	(7.02, N/A) (N/A, -0.05, N/A)	606.7	N/A	1.7814 [2.0000]	89.1% { 112.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 538541	(7.83, N/A) (N/A, -0.05, N/A)	613.0	N/A	1.7440 [2.0000]	87.2% { 105.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 203582	(8.57, N/A) (N/A, -0.06, N/A)	320.0	N/A	0.8988 [1.0000]	89.9% { 111.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 260824	(9.26, N/A) (N/A, -0.05, N/A)	456.0	N/A	0.8077 [1.0000]	80.8% { 104.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 361252	(9.70, N/A) (N/A, -0.02, N/A)	606.8	N/A	0.7865 [1.0000]	78.6% { 112.3% }			

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) 315185	(9.88, N/A) (N/A, -0.01, N/A)	600.5	N/A	0.6875 [1.0000]	68.7% { 85.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 207762	(10.12, N/A) (N/A, 0.00, N/A)	357.0	N/A	0.6824 [1.0000]	68.2% { 75.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1558765	(6.04, N/A) (N/A, -0.04, N/A)	767.4	N/A	1.7887 [2.0000]	89.4% { 110.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 754685	(7.96, N/A) (N/A, -0.05, N/A)	710.1	N/A	1.6276 [2.0000]	81.4% { 109.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1008024	(9.41, N/A) (N/A, -0.05, N/A)	363.4	N/A	1.3948 [2.0000]	69.7% { 94.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 254811	(5.76, N/A) (N/A, -0.04, N/A)	803.5	N/A	3.4522 [4.0000]	86.3% { 113.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 284851	(7.50, N/A) (N/A, -0.04, N/A)	458.0	N/A	3.2054 [4.0000]	80.1% { 98.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 262813	(8.92, N/A) (N/A, -0.05, N/A)	397.0	N/A	2.9543 [4.0000]	73.9% { 116.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1393431	(10.17, N/A) (N/A, -0.01, N/A)	975.4	N/A	1.5253 [2.0000]	76.3% { 98.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 89923	(10.60, N/A) (N/A, -0.01, N/A)	433.6	N/A	0.4508 [2.0000]	22.5% { 26.5% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 67398	(10.69, N/A) (N/A, -0.01, N/A)	794.4	N/A	0.3660 [2.0000]	18.3% { 22.3% }			S1,

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) 467898	(9.46, N/A) (N/A, -0.04, N/A)	469.6	N/A	2.7227 [4.0000]	68.1% { 80.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 400646	(9.66, N/A) (N/A, -0.03, N/A)	403.3	N/A	2.6450 [4.0000]	66.1% { 88.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 231292	(10.56, N/A) (N/A, -0.01, N/A)	1032.5	N/A	8.2587 [20.0000]	41.3% { 49.3% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 94377	(10.66, N/A) (N/A, -0.01, N/A)	825.5	N/A	7.4023 [20.0000]	37.0% { 43.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1313384	(6.44, N/A) (N/A, -0.05, N/A)	752.3	N/A	7.3545 [8.0000]	91.9% { 108.1% }			

ANALYSIS DATA SHEET

MRL Check

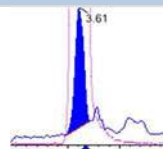
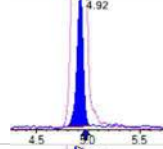
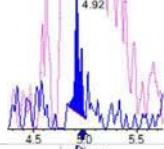
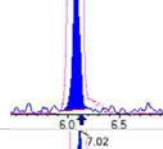
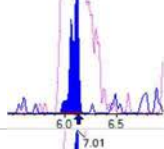
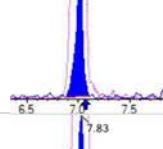
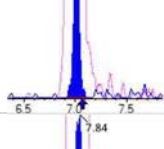
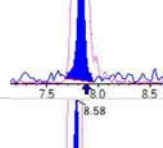
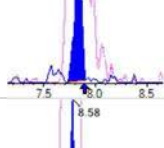
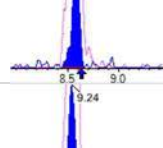
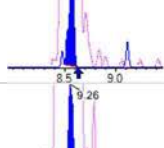
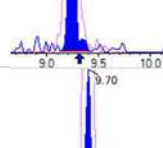
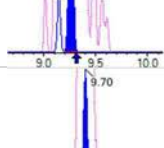
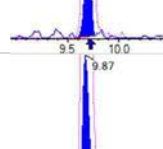
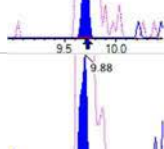
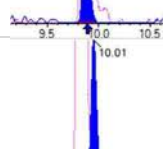
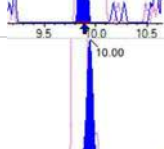
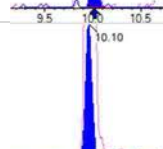
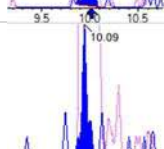

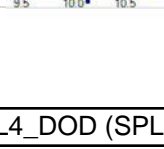
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Matrix:	Solid	Laboratory ID:	BBL0372-MRL1
Sampled:		File ID:	S2022-12-21B (9)
		Prepared:	12/19/22 12:22
		Analyzed:	12/21/22 20:22
Solids:		Preparation:	PFAS Leachates
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Batch:	BBL0372	Sequence:	SB03942
		Calibration:	2252011
Column:	1	Instrument:	Saphira

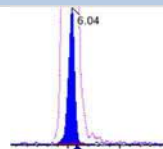
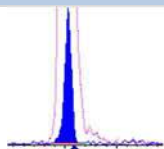
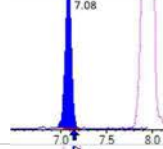
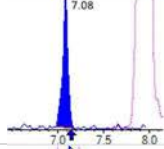
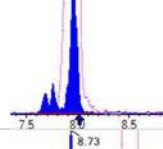
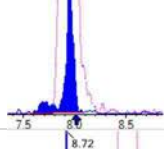
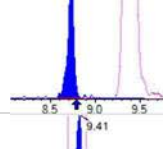
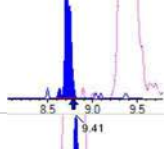
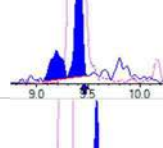
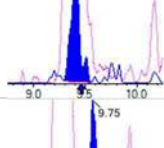
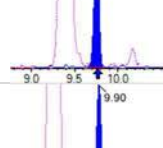
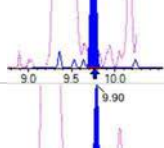
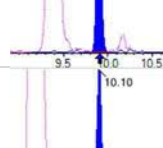
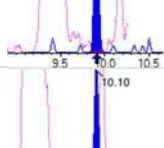
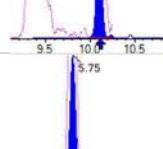
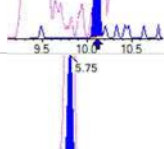
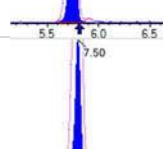
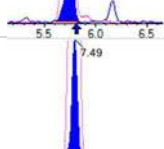
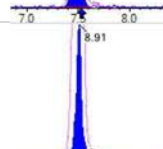
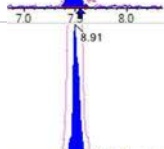

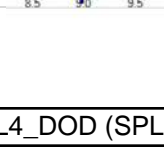
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	6.93	8.0	1.0	J
PFPEA	4.18	4.0	0.32	
PFHXA	2.19	2.0	0.28	
PFHPA	2.47	2.0	0.20	
PFOA	2.42	2.0	0.75	
PFNA	2.24	2.0	0.41	
PFDA	2.37	2.0	0.50	
PFUnA	1.90	2.0	0.80	IR2, J
PFDOA	1.26	2.0	0.55	IR2, J
PFTRDA	1.57	2.0	1.0	IR2, J
PFTEDA	1.95	2.0	1.0	J
PFBS	1.81	2.0	0.18	J
PFPEs	1.90	2.0	0.32	J
PFHXS	1.90	2.0	0.16	J
PFHPS	1.67	2.0	0.26	J
PFOS	2.00	2.0	0.32	
PFNS	1.40	2.0	0.60	J
PFDS	1.52	2.0	0.75	J
PFDOS	1.36	2.0	0.60	J
4:2FTS	6.65	8.0	1.4	J
6:2FTS	8.82	8.0	1.6	
8:2FTS	6.56	8.0	0.41	J
PFOSA	1.76	2.0	0.50	J
NMeFOSA	5.78	8.0	2.4	J
NEtFOSA	6.02	8.0	2.0	J
NMeFOSAA	2.08	2.0	0.55	
NEtFOSAA	1.94	2.0	0.55	J
NMeFOSE	7.27	8.0	5.0	J
NEtFOSE	7.22	8.0	5.0	J
HFPO-DA	3.59	4.0	0.85	J

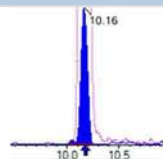
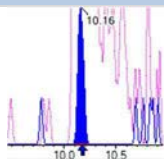
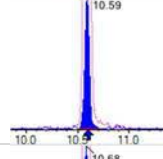
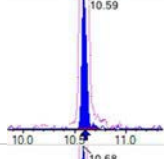
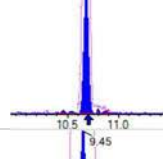
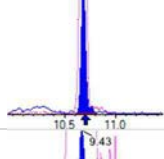
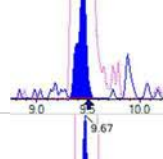
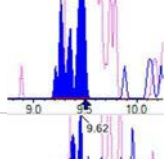
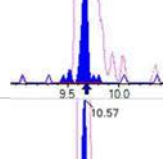
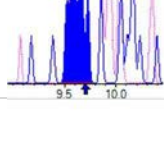
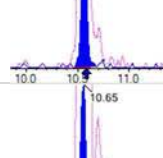
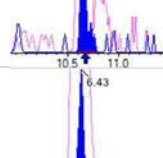
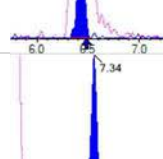
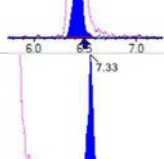
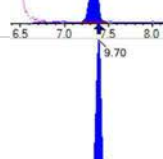
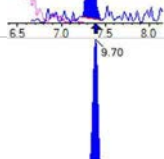
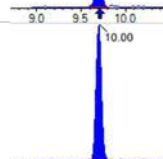
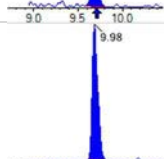
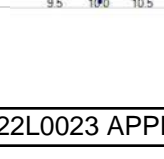
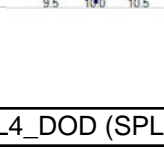
ANALYSIS DATA SHEET**MRL Check**

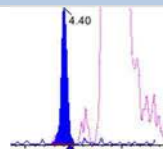
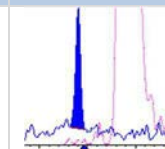
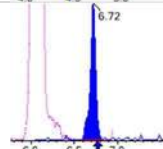
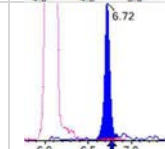
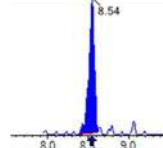
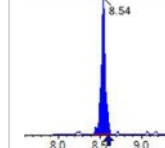
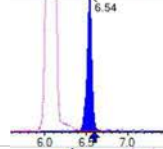
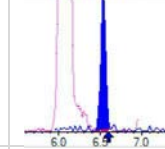
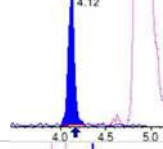
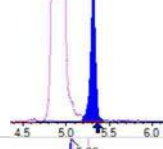
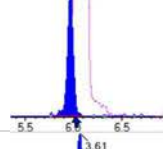
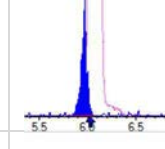
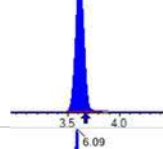
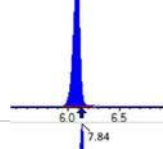
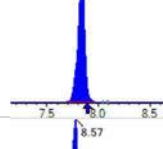
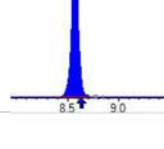
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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Solid	Laboratory ID:	BBL0372-MRL1
Sampled:		File ID:	S2022-12-21B (9)
		Prepared:	12/19/22 12:22
Solids:		Analyzed:	12/21/22 20:22
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Batch:	BBL0372	Dilution:	1
Column:	1	Sequence:	SB03942
		Calibration:	2252011
		Instrument:	Saphira

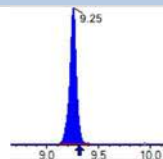
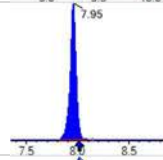
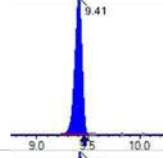
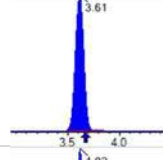
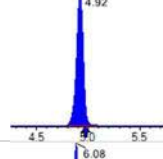
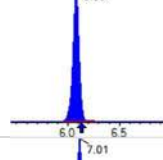
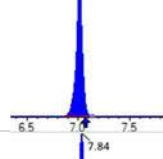
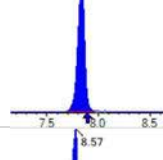
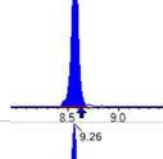
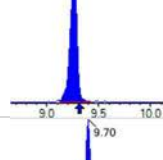
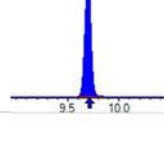
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	3.68	4.0	0.60	J
PFEESA	3.22	4.0	0.55	J
PFMPA	3.78	4.0	0.27	J
PFMBA	3.64	4.0	0.46	J
NFDHA	3.61	4.0	1.5	J
9CL-PF3ONS	2.84	4.0	1.0	J
11CL-PF3OUDS	2.80	4.0	1.0	J
3:3FTCA	9.01	8.0	2.8	
5:3FTCA	7.50	8.0	2.2	J
7:3FTCA	7.90	8.0	2.8	J

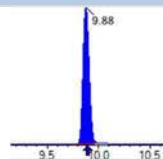
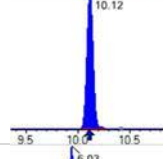
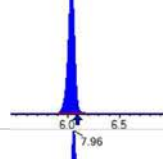
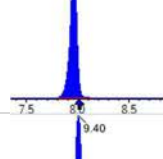
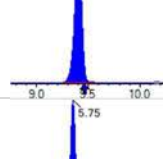
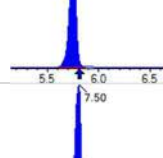
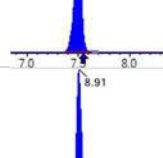
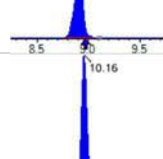
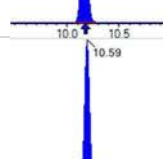
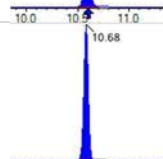

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 40183	(3.61, 1.00) (0.00, N/A, 0.0)	37.8	N/A 0.0 0.0	0.3466 [0.4000]	86.7%			
PFPeA	(262.9 / 219.0) 33176 (262.9 / 69.0) 324	(4.92, 1.00) (0.00, N/A, 0.1)	214.6 14.4	0.0098 87.4 84.3	0.2089 [0.2000]	104.4%			
PFHxA	(313.0 / 269.0) 27389 (313.0 / 119.0) 3293	(6.08, 1.00) (0.00, N/A, -1.4)	76.1 39.5	0.1202 123.0 129.7	0.1096 [0.1000]	109.6%			
PFHpA	(363.0 / 319.0) 29534 (363.0 / 169.0) 7769	(7.02, 1.00) (0.00, N/A, 0.1)	121.5 73.3	0.2631 84.5 84.4	0.1235 [0.1000]	123.5%			
PFOA	(413.0 / 369.0) 31534 (413.0 / 169.0) 8855	(7.83, 1.00) (0.00, N/A, -0.3)	78.9 70.5	0.2808 85.9 85.4	0.1209 [0.1000]	120.9%			
PFNA	(463.0 / 419.0) 18472 (463.0 / 169.0) 4349	(8.58, 1.00) (0.01, N/A, 0.5)	105.2 51.5	0.2355 122.2 102.6	0.1121 [0.1000]	112.1%			
PFDA	(513.0 / 469.0) 26246 (513.0 / 169.0) 1825	(9.24, 1.00) (-0.02, N/A, -1.1)	50.5 35.4	0.0695 72.7 64.4	0.1185 [0.1000]	118.5%			
PFUnA	(563.0 / 519.0) 24320 (563.0 / 169.0) 3449	(9.70, 1.00) (0.00, N/A, 0.0)	77.4 313.6	0.1418 163.3 138.4	0.0948 [0.1000]	94.8%			IR2,
PFDoA	(613.0 / 569.0) 19933 (613.0 / 169.0) 4125	(9.87, 1.00) (0.00, N/A, -0.6)	93.6 30.6	0.2069 148.6 176.4	0.0630 [0.1000]	63.0%			QC,IR2,
PFTrDA	(663.0 / 619.0) 21553 (663.0 / 169.0) 8171	(10.01, 1.01) (N/A, -0.01, 0.6)	101.1 50.8	0.3791 185.2 177.6	0.0786 [0.1000]	78.6%			IR2,
PFTeDA	(713.0 / 669.0) 21971 (713.0 / 169.0) 2833	(10.10, 1.00) (-0.01, N/A, 0.7)	86.5 25.2	0.1290 63.4 73.3	0.0973 [0.1000]	97.3%			

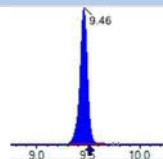
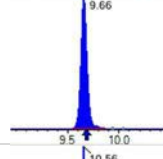
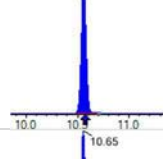
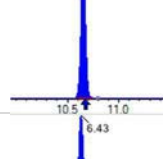
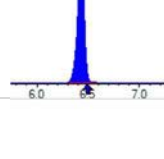
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 35555 (298.9 / 99.0) 24215	(6.04, 1.00) (0.00, N/A, 0.3)	249.0 138.2	0.6811 110.7 109.0	0.0907 [0.0885]	102.5%			
PFPeS	(349.0 / 80.0) 65078 (349.0 / 99.0) 20671	(7.08, 0.89) (N/A, -0.05, -0.1)	305.4 120.1	0.3176 89.2 92.6	0.0948 [0.0938]	101.0%			
PFHxS	(399.0 / 80.0) 56809 (399.0 / 99.0) 17411	(7.96, 1.00) (0.00, N/A, 0.5)	2776.7 218.0	0.3065 91.2 90.2	0.0952 [0.0911]	104.5%			
PFHpS	(449.0 / 80.0) 40140 (449.0 / 99.0) 13038	(8.73, 0.93) (N/A, -0.05, 0.8)	178.5 110.4	0.3248 118.7 116.8	0.0835 [0.0951]	87.8%			
PFOS	(499.0 / 80.0) 59841 (499.0 / 99.0) 15276	(9.41, 1.00) (0.01, N/A, 0.1)	97.5 40.7	0.2553 105.0 118.9	0.1001 [0.0927]	107.9%			M14 ABK 12/22/22
PFNS	(549.0 / 80.0) 46281 (549.0 / 99.0) 9579	(9.75, 1.04) (N/A, -0.02, 0.1)	209.2 95.2	0.2070 84.8 82.9	0.0698 [0.0960]	72.7%			
PFDS	(599.0 / 80.0) 56083 (599.0 / 99.0) 9883	(9.90, 1.05) (N/A, -0.01, -0.2)	205.1 71.2	0.1762 78.3 84.9	0.0762 [0.0963]	79.1%			
PFDoS	(698.9 / 80.0) 20928 (698.9 / 99.0) 5282	(10.10, 1.07) (N/A, -0.01, -0.2)	882.0 51.9	0.2524 103.2 101.9	0.0680 [0.0970]	70.1%			
4:2FTS	(327.0 / 307.0) 73847 (327.0 / 81.0) 44468	(5.75, 1.00) (0.00, N/A, -0.1)	607.9 132.1	0.6022 121.9 116.7	0.3326 [0.3738]	89.0%			
6:2FTS	(427.0 / 407.0) 51047 (427.0 / 81.0) 38283	(7.50, 1.00) (0.00, N/A, 0.2)	279.3 215.6	0.7500 96.4 115.8	0.4411 [0.3796]	116.2%			
8:2FTS	(527.0 / 507.0) 35241 (527.0 / 81.0) 23642	(8.91, 1.00) (0.00, N/A, 0.2)	219.7 113.3	0.6709 118.5 83.5	0.3278 [0.3833]	85.5%			

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) 53551 (498.0 / 478.0) 1542	(10.16, 1.00) (0.00, N/A, 0.3)	210.5 23.6	0.0288 138.2 122.8	0.0880 [0.1000]	88.0%			
NMeFOSA	(511.9 / 219.0) 12698 (511.9 / 169.0) 7583	(10.59, 1.00) (0.00, N/A, 0.0)	265.2 215.2	0.5972 82.9 92.5	0.2892 [0.4000]	72.3%			
NEIFOSA	(526.0 / 219.0) 11723 (526.0 / 169.0) 12205	(10.68, 1.00) (0.00, N/A, -0.1)	126902.9 156.3	1.0412 98.4 102.3	0.3012 [0.4000]	75.3%			
NMeFOSAA	(570.0 / 419.0) 10202 (570.0 / 483.0) 4663	(9.45, 1.00) (-0.01, N/A, 1.0)	45.6 141.1	0.4571 74.4 94.8	0.1042 [0.1000]	104.2%			
NEIFOSAA	(584.0 / 419.0) 9305 (584.0 / 526.0) 3738	(9.67, 1.00) (0.01, N/A, 3.0)	2559.7 91.7	0.4017 54.8 64.4	0.0968 [0.1000]	96.8%			
NMeFOSE	(616.1 / 59.0) 6114	(10.57, 1.00) (0.00, N/A, 0.0)	123.0	N/A 0.0 0.0	0.3635 [0.4000]	90.9%			
NEtFOSE	(630.0 / 59.0) 1067	(10.65, 1.00) (0.00, N/A, 0.0)	40.1	N/A 0.0 0.0	0.3611 [0.4000]	90.3%			
HFPO-DA	(285.0 / 169.0) 17147 (285.0 / 185.0) 53897	(6.43, 1.00) (0.00, N/A, 0.2)	192.6 263.1	3.1432 114.5 109.7	0.1795 [0.2000]	89.8%			
ADONA	(377.0 / 85.0) 78157 (377.0 / 251.0) 11701	(7.34, 1.14) (N/A, -0.05, 0.2)	434.4 49.0	0.1497 120.2 108.1	0.1842 [0.1885]	97.7%			
9CI-Pf3ONS	(531.0 / 351.0) 184212 (533.0 / 353.0) 51465	(9.70, 1.51) (N/A, -0.02, 0.2)	405.2 114.1	0.2794 94.4 89.6	0.1422 [0.1867]	76.2%			
11CI-PF3OUDS	(631.0 / 451.0) 82900 (633.0 / 453.0) 26728	(10.00, 1.55) (N/A, -0.01, 0.7)	377.9 1217.7	0.3224 97.5 114.6	0.1398 [0.1886]	74.1%			

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) 2468 (241.0 / 117.0) 3214	(4.40, 0.89) (N/A, -0.05, 0.0)	123.7 49.4	1.3023 77.8 75.6	0.4503 [0.4000]	112.6%			
5:3FTCA	(341.0 / 236.7) 16555 (341.0 / 217.0) 27874	(6.72, 1.11) (N/A, -0.05, 0.0)	147.7 132.4	1.6837 115.0 108.7	0.3751 [0.4000]	93.8%			
7:3FTCA	(441.0 / 317.0) 20066 (441.0 / 337.0) 16631	(8.54, 1.41) (N/A, -0.05, 0.2)	81.0 242.4	0.8288 99.0 102.3	0.3951 [0.4000]	98.8%			
PFEESA	(315.0 / 135.0) 44007 (315.0 / 83.0) 14332	(6.54, 1.08) (N/A, -0.05, 0.3)	322.7 103.4	0.3257 106.1 109.4	0.1609 [0.1785]	90.1%			
PFMPA	(229.0 / 85.0) 8234	(4.12, 0.84) (N/A, -0.05, 0.0)	205.7	N/A 0.0 0.0	0.1889 [0.2000]	94.4%			
PFMBA	(279.0 / 85.0) 27390	(5.31, 1.08) (N/A, -0.05, 0.0)	474.3	N/A 0.0 0.0	0.1818 [0.2000]	90.9%			
NFDHA	(295.0 / 201.0) 22711 (295.0 / 85.0) 23324	(5.96, 0.98) (N/A, -0.05, -0.1)	177.5 88.1	1.0270 116.3 110.3	0.1803 [0.2000]	90.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 188091	(3.61, N/A) (N/A, -0.05, N/A)	767.3	N/A	1.3513 [1.0000]	135.1% {115.4%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 285607	(6.09, N/A) (N/A, -0.05, N/A)	419.0	N/A	1.2368 [1.0000]	123.7% {127.8%}			
13C4_PFOA_IIS	(417.0 / 372.0) 281063	(7.84, N/A) (N/A, -0.05, N/A)	590.3	N/A	1.2784 [1.0000]	127.8% {115.3%}			
13C5_PFNA_IIS	(468.0 / 423.0) 229751	(8.57, N/A) (N/A, -0.06, N/A)	356.5	N/A	1.2407 [1.0000]	124.1% {127.4%}			

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) 223276	(9.25, N/A) (N/A, -0.06, N/A)	398.4	N/A	1.2081 [1.0000]	120.8% { 111.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 539093	(7.95, N/A) (N/A, -0.06, N/A)	818.9	N/A	1.3353 [1.0000]	133.5% { 130.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 403555	(9.41, N/A) (N/A, -0.05, N/A)	383.4	N/A	1.2644 [1.0000]	126.4% { 119.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1421591	(3.61, N/A) (N/A, -0.05, N/A)	791.8	N/A	7.3434 [8.0000]	91.8% { 113.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 723384	(4.92, N/A) (N/A, -0.05, N/A)	646.8	N/A	3.6402 [4.0000]	91.0% { 109.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 581753	(6.08, N/A) (N/A, -0.05, N/A)	592.7	N/A	1.7700 [2.0000]	88.5% { 110.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 524865	(7.01, N/A) (N/A, -0.06, N/A)	640.8	N/A	1.8306 [2.0000]	91.5% { 112.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 530407	(7.84, N/A) (N/A, -0.05, N/A)	631.7	N/A	1.7208 [2.0000]	86.0% { 103.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 192008	(8.57, N/A) (N/A, -0.06, N/A)	297.1	N/A	0.7600 [1.0000]	76.0% { 104.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 232662	(9.26, N/A) (N/A, -0.05, N/A)	308.2	N/A	0.7327 [1.0000]	73.3% { 92.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 324478	(9.70, N/A) (N/A, -0.02, N/A)	619.6	N/A	0.7184 [1.0000]	71.8% { 100.8% }			

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_EIS	(615.0 / 570.0) 367208	(9.88, N/A) (N/A, -0.02, N/A)	26.6	N/A	0.8145 [1.0000]	81.5% { 99.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 254864	(10.12, N/A) (N/A, 0.00, N/A)	411.1	N/A	0.8512 [1.0000]	85.1% { 92.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1430440	(6.03, N/A) (N/A, -0.05, N/A)	836.9	N/A	1.5694 [2.0000]	78.5% { 101.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 768386	(7.96, N/A) (N/A, -0.05, N/A)	716.1	N/A	1.5844 [2.0000]	79.2% { 111.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1101700	(9.40, N/A) (N/A, -0.05, N/A)	464.7	N/A	1.5907 [2.0000]	79.5% { 103.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 268577	(5.75, N/A) (N/A, -0.05, N/A)	594.7	N/A	3.4790 [4.0000]	87.0% { 119.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 301088	(7.50, N/A) (N/A, -0.04, N/A)	540.2	N/A	3.2394 [4.0000]	81.0% { 104.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 271464	(8.91, N/A) (N/A, -0.05, N/A)	522.6	N/A	2.9176 [4.0000]	72.9% { 120.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1287350	(10.16, N/A) (N/A, -0.02, N/A)	892.2	N/A	1.4704 [2.0000]	73.5% { 90.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 107716	(10.59, N/A) (N/A, -0.01, N/A)	720.4	N/A	0.5635 [2.0000]	28.2% { 31.8% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 86308	(10.68, N/A) (N/A, -0.01, N/A)	740.5	N/A	0.4891 [2.0000]	24.5% { 28.6% }			

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) 502410	(9.46, N/A) (N/A, -0.05, N/A)	471.3	N/A	3.0505 [4.0000]	76.3% { 86.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 428519	(9.66, N/A) (N/A, -0.03, N/A)	423.1	N/A	2.9519 [4.0000]	73.8% { 94.9% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 266547	(10.56, N/A) (N/A, -0.01, N/A)	993.2	N/A	9.9310 [20.0000]	49.7% { 56.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 115411	(10.65, N/A) (N/A, -0.01, N/A)	1079.6	N/A	9.4453 [20.0000]	47.2% { 52.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1257202	(6.43, N/A) (N/A, -0.05, N/A)	732.5	N/A	7.1945 [8.0000]	89.9% { 103.4% }			

PREPARATION BENCH SHEET

Organics

BBL0372

Matrix: Solid **Prepared using: PFAS - PFAS Leachates**

Analyses		Spiking Solution(s)			Surrogate Solution(s)				
1633 SPLP		22L0269 PFAS - MIX 1633 10ng/mL			22L0359 MPFAC-HIF-ES 20.0ng/mL				
Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
22L0023-01	ADIT6-IDW-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	107.51	2		200	prepped by HGH extracted by LYA
22L0023-01RE1	ADIT6-IDW-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	107.51	2		200	Added 12/21/2022 by DAG
22L0023-02	ADIT6-IDW-SOFD01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	105.04	2		200	prepped by HGH extracted by LYA
22L0023-02RE1	ADIT6-IDW-SOFD01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	105.04	2		200	Added 12/21/2022 by DAG
22L0023-03	ADIT6-IDW-SOFT01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	108.34	2		200	prepped by HGH extracted by LYA
22L0023-03RE1	ADIT6-IDW-SOFT01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	108.34	2		200	Added 12/21/2022 by DAG
22L0023-04	ADIT6-DU02-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	109.11	2		200	prepped by HGH extracted by LYA
22L0023-04RE1	ADIT6-DU02-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	109.11	2		200	Added 12/21/2022 by DAG
22L0023-05	ADIT6-DU02-SOFD01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	107.57	2		200	prepped by HGH extracted by LYA
22L0023-05RE1	ADIT6-DU02-SOFD01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	107.57	2		200	Added 12/21/2022 by DAG
22L0023-06	ADIT6-DU02-SOFT01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	109.78	2		200	prepped by HGH extracted by LYA
22L0023-06RE1	ADIT6-DU02-SOFT01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	109.78	2		200	Added 12/21/2022 by DAG
22L0023-07	ADIT6-DU04A-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	109	2		200	prepped by HGH extracted by LYA
22L0023-07RE1	ADIT6-DU04A-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	109	2		200	Added 12/21/2022 by DAG
22L0023-08	ADIT6-DU01-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	108.35	2		200	prepped by HGH extracted by LYA
22L0023-08RE1	ADIT6-DU01-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	108.35	2		200	Added 12/21/2022 by DAG
22L0023-09	ADIT6-DU04B-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	106.8	2		200	prepped by HGH extracted by LYA
22L0023-09RE1	ADIT6-DU04B-SON01MI-22DEC	12/16/2022	12/30/2022	12/19/2022 12:22:00PM	106.8	2		200	Added 12/21/2022 by DAG
22L0057-01	ADIT6-DU03-SON01MI-22DEC	12/15/2022	01/04/2023	12/19/2022 12:22:00PM	107.38	2		200	prepped by HGH extracted by LYA
22L0057-01RE1	ADIT6-DU03-SON01MI-22DEC	12/15/2022	01/04/2023	12/19/2022 12:22:00PM	107.38	2		200	Added 12/21/2022 by DAG
BBL0372-BLK1	Blank			12/19/2022 12:22:00PM	100	2	0	200	
BBL0372-BS1	LCS			12/19/2022 12:22:00PM	100	2	200	200	

PREPARATION BENCH SHEET

Organics

Print Date/Time: 12/22/2022 3:34 pm

BBL0372

(Continued)

Matrix: Solid

Prepared using: PFAS - PFAS Leachates

Analyses	MRL Check	Spiking Solution(s)	Surrogate Solution(s)
1633 SPLP		PFAS - MIX 1633 10ng/mL	MPFAC-HIF-ES 20.0ng/mL
BBL0372-MRL1	MRL Check	12/19/2022 12:22:00PM 100 2	20 200

Start Date/Time _____
 Stop Date/Time _____

Batch Comments:
 Spiked by: HIGH
 Balance #: WB2
 Cartridge: Oasis
 concentration: 12/20/2 6:10PM-9:00PM
 12/21/22 6:36AM-7:10AM

Reagents	Standard	Description	LotNum
	22K0511	Reagent -0.3M Formic Acid	M13H051
	22L0094	Reagent - 0.05MFA wash	x
	22L0368	Reagent - 1.0% Ammonia Hydroxide	219481

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

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633 SPLP

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Sequence:	SB03941	Instrument:	Saphira
Calibration:	2252011		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SB03941-CAL1	S2022-12-21A (1)	12/21/22 14:26
Cal Standard	SB03941-CAL2	S2022-12-21A (2)	12/21/22 14:39
Cal Standard	SB03941-CAL3	S2022-12-21A (3)	12/21/22 14:51
Cal Standard	SB03941-CAL4	S2022-12-21A (4)	12/21/22 15:04
Cal Standard	SB03941-CAL5	S2022-12-21A (5)	12/21/22 15:17
Cal Standard	SB03941-CAL6	S2022-12-21A (6)	12/21/22 15:30
Cal Standard	SB03941-CAL7	S2022-12-21A (7)	12/21/22 15:42
Cal Standard	SB03941-CAL8	S2022-12-21A (8)	12/21/22 15:55
Initial Cal Blank	SB03941-ICB1	S2022-12-21A (9)	12/21/22 16:08
Secondary Cal Check	SB03941-SCV1	S2022-12-21A (10)	12/21/22 16:20

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633 SPLP

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03942
 Calibration: 2252011

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

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SB03942-CCB1	S2022-12-21B (1)	12/21/22 16:46
Low Cal Check	SB03942-LCV1	S2022-12-21B (2)	12/21/22 16:58
Calibration Check	SB03942-CCV1	S2022-12-21B (3)	12/21/22 17:11
Calibration Blank	SB03942-CCB2	S2022-12-21B (4)	12/21/22 17:49
Calibration Check	SB03942-CCV2	S2022-12-21B (5)	12/21/22 19:31
Calibration Blank	SB03942-CCB3	S2022-12-21B (6)	12/21/22 19:44
Blank	BBL0372-BLK1	S2022-12-21B (7)	12/21/22 19:57
LCS	BBL0372-BS1	S2022-12-21B (8)	12/21/22 20:09
MRL Check	BBL0372-MRL1	S2022-12-21B (9)	12/21/22 20:22
ADIT6-IDW-SON01MI-22DEC	22L0023-01	S2022-12-21B (10)	12/21/22 20:35
ADIT6-IDW-SON01MI-22DEC	22L0023-01RE1	S2022-12-21B (11)	12/21/22 20:47
ADIT6-IDW-SOFD01MI-22DEC	22L0023-02	S2022-12-21B (12)	12/21/22 21:00
ADIT6-IDW-SOFD01MI-22DEC	22L0023-02RE1	S2022-12-21B (13)	12/21/22 21:13
ADIT6-IDW-SOFT01MI-22DEC	22L0023-03	S2022-12-21B (14)	12/21/22 21:25
ADIT6-IDW-SOFT01MI-22DEC	22L0023-03RE1	S2022-12-21B (15)	12/21/22 21:38
ADIT6-DU02-SON01MI-22DEC	22L0023-04	S2022-12-21B (16)	12/21/22 21:51
ADIT6-DU02-SON01MI-22DEC	22L0023-04RE1	S2022-12-21B (17)	12/21/22 22:03
ADIT6-DU02-SOFD01MI-22DEC	22L0023-05	S2022-12-21B (18)	12/21/22 22:16
ADIT6-DU02-SOFD01MI-22DEC	22L0023-05RE1	S2022-12-21B (19)	12/21/22 22:29
ADIT6-DU02-SOFT01MI-22DEC	22L0023-06	S2022-12-21B (20)	12/21/22 22:42
ADIT6-DU02-SOFT01MI-22DEC	22L0023-06RE1	S2022-12-21B (21)	12/21/22 22:54
ADIT6-DU04A-SON01MI-22DEC	22L0023-07	S2022-12-21B (22)	12/21/22 23:07
ADIT6-DU01-SON01MI-22DEC	22L0023-08	S2022-12-21B (24)	12/21/22 23:32
ADIT6-DU04B-SON01MI-22DEC	22L0023-09	S2022-12-21B (26)	12/21/22 23:58
Calibration Check	SB03942-CCV3	S2022-12-21B (30)	12/22/22 00:49
Calibration Blank	SB03942-CCB4	S2022-12-21B (31)	12/22/22 01:01
Calibration Check	SB03942-CCV4	S2022-12-21B (40)	12/22/22 03:21
Calibration Blank	SB03942-CCB5	S2022-12-21B (41)	12/22/22 03:34

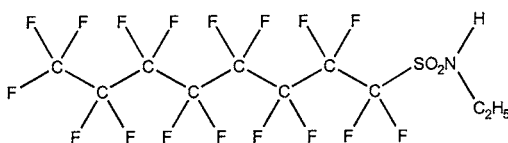


WELLINGTON LABORATORIES

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:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

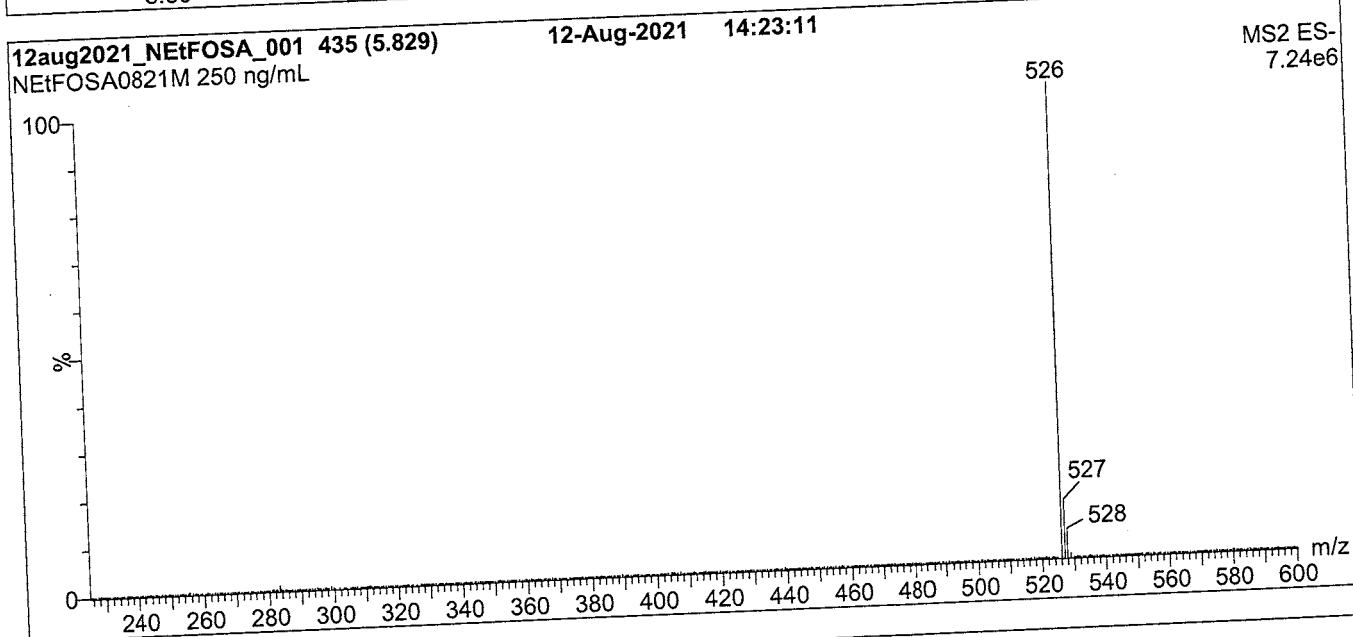
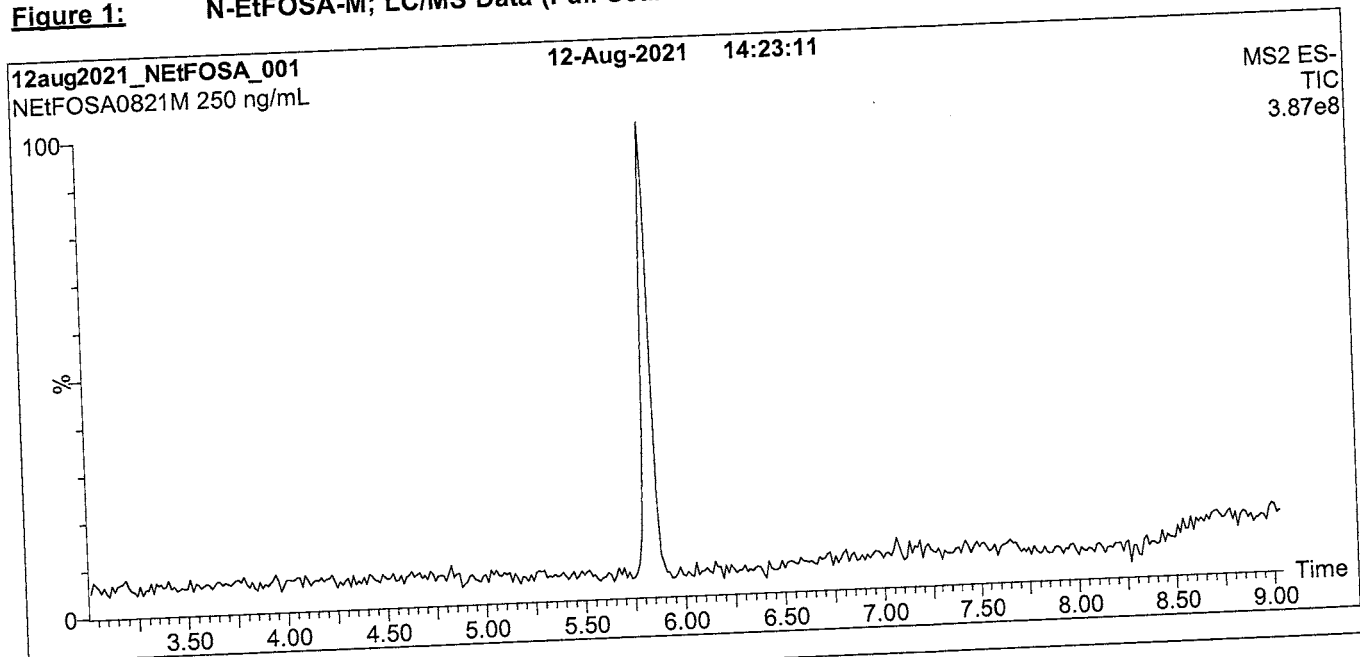
QUALITY MANAGEMENT:

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



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

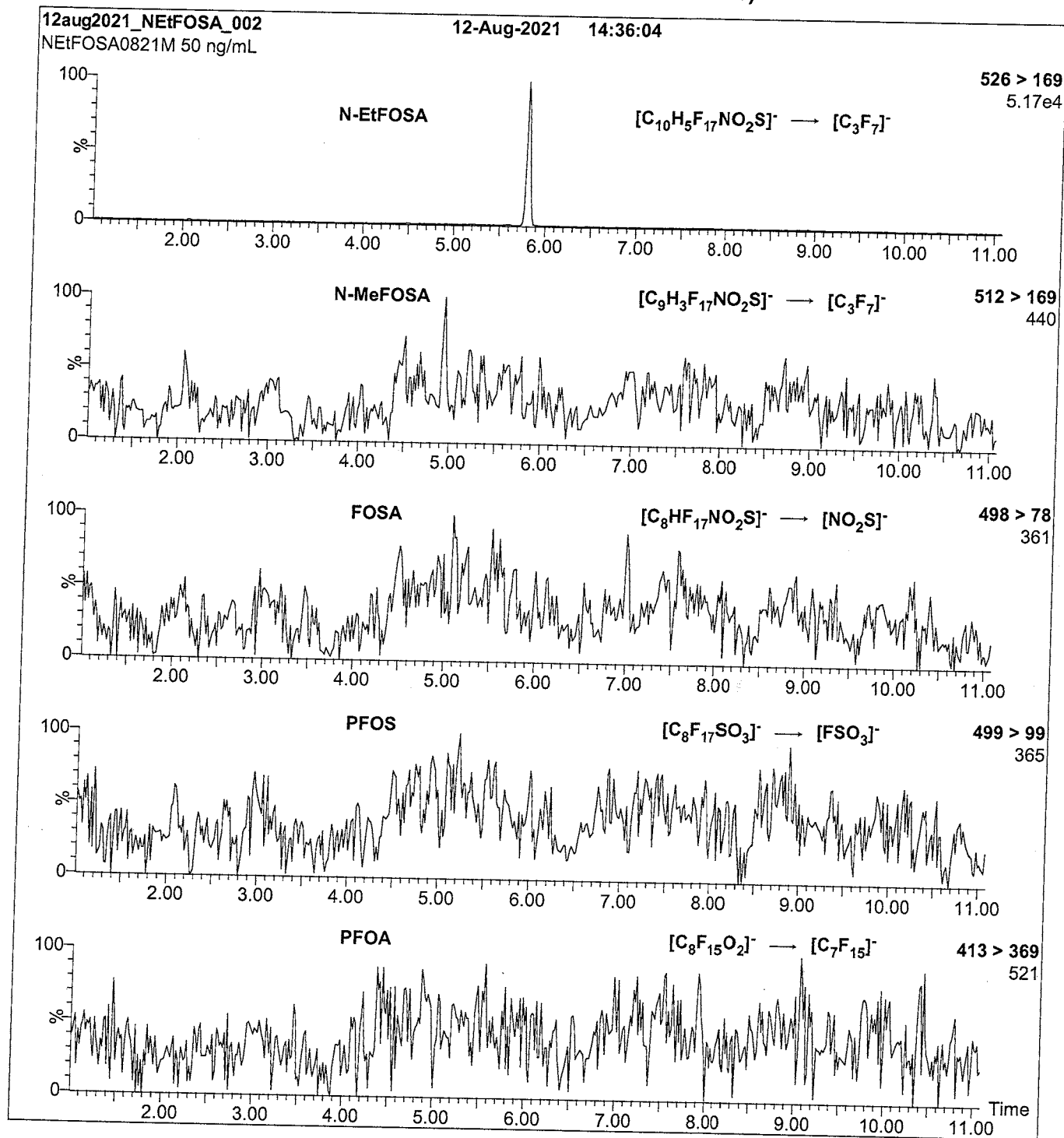
Flow: 300 μ L/min

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

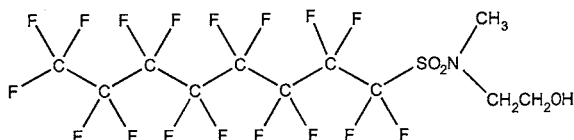


WELLINGTON LABORATORIES

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:

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

HANDLING:

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HOMOGENEITY:

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

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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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

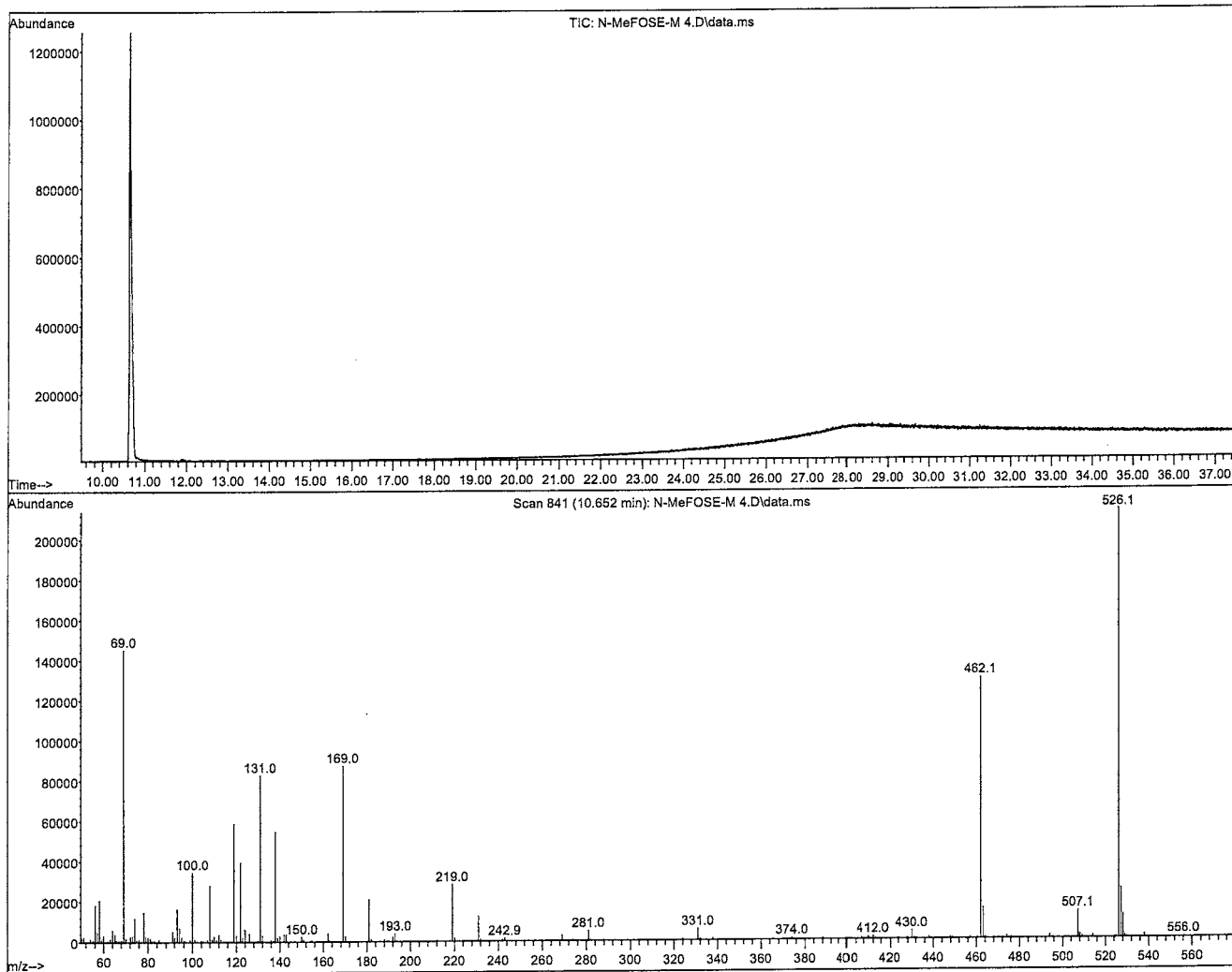
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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: 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

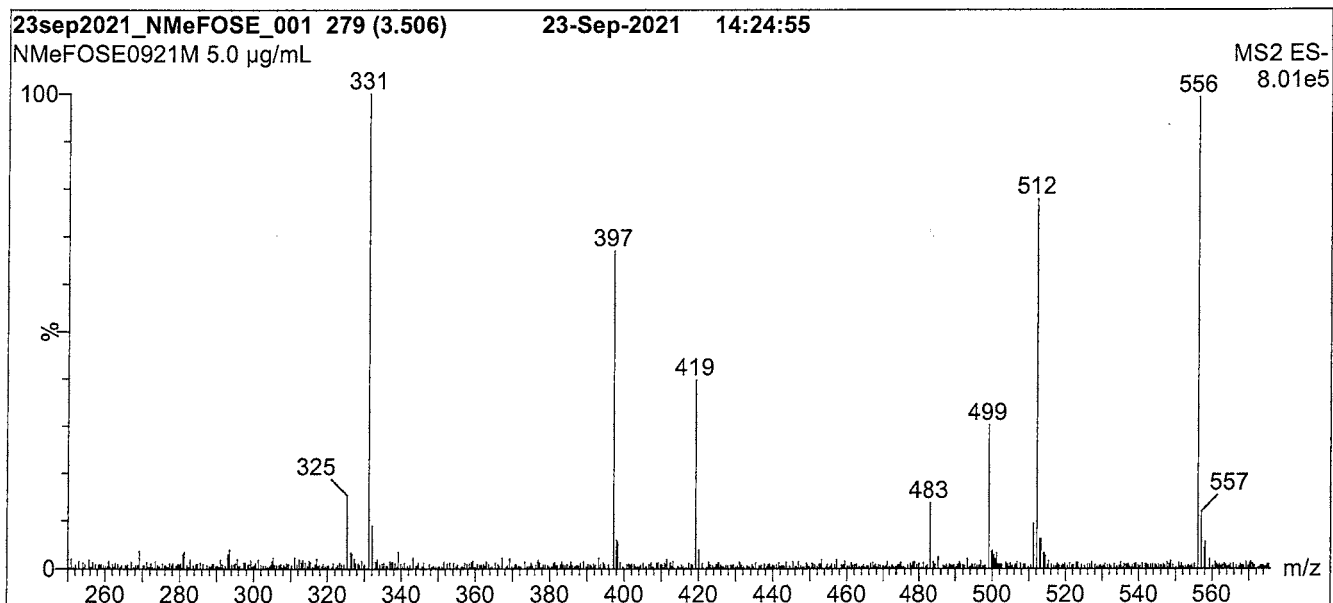
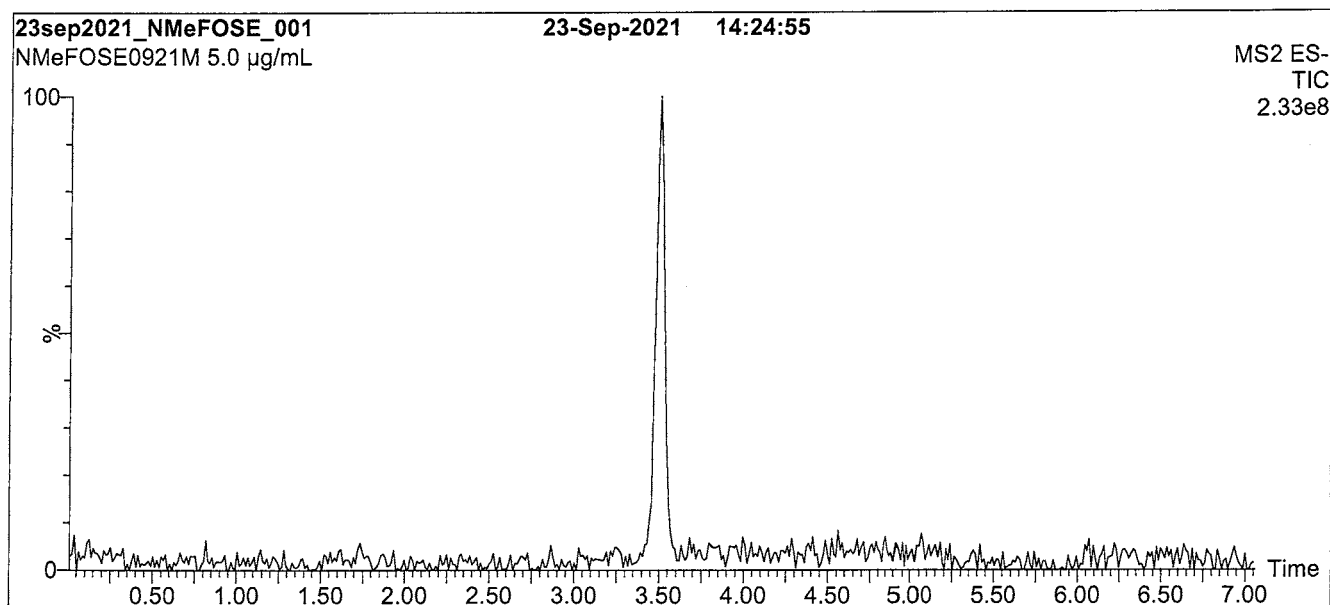
Flow: Constant at 1 mL/min

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

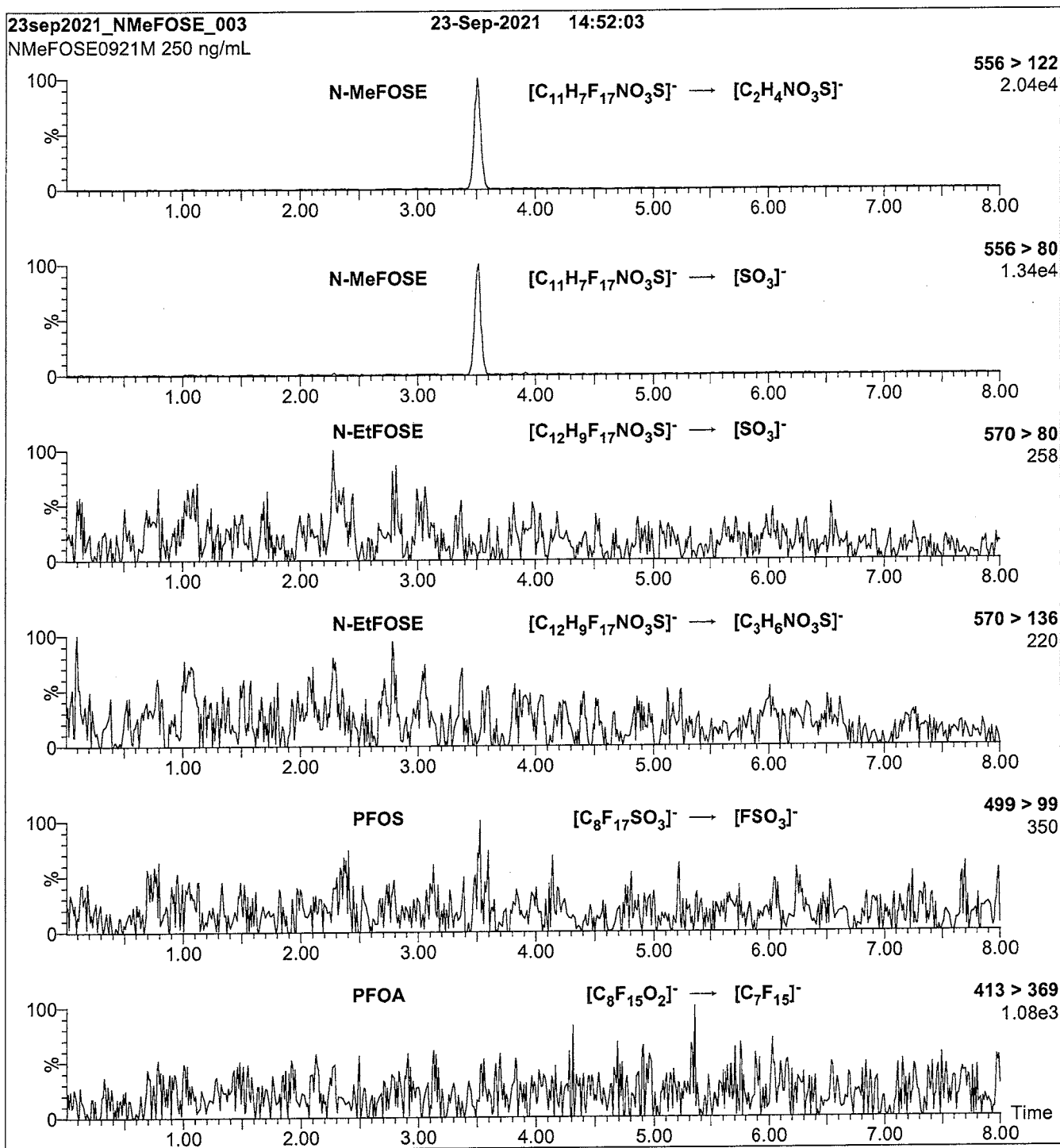
Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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

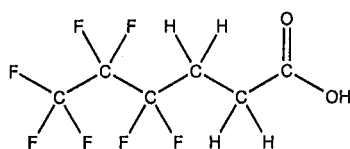
Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL



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

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

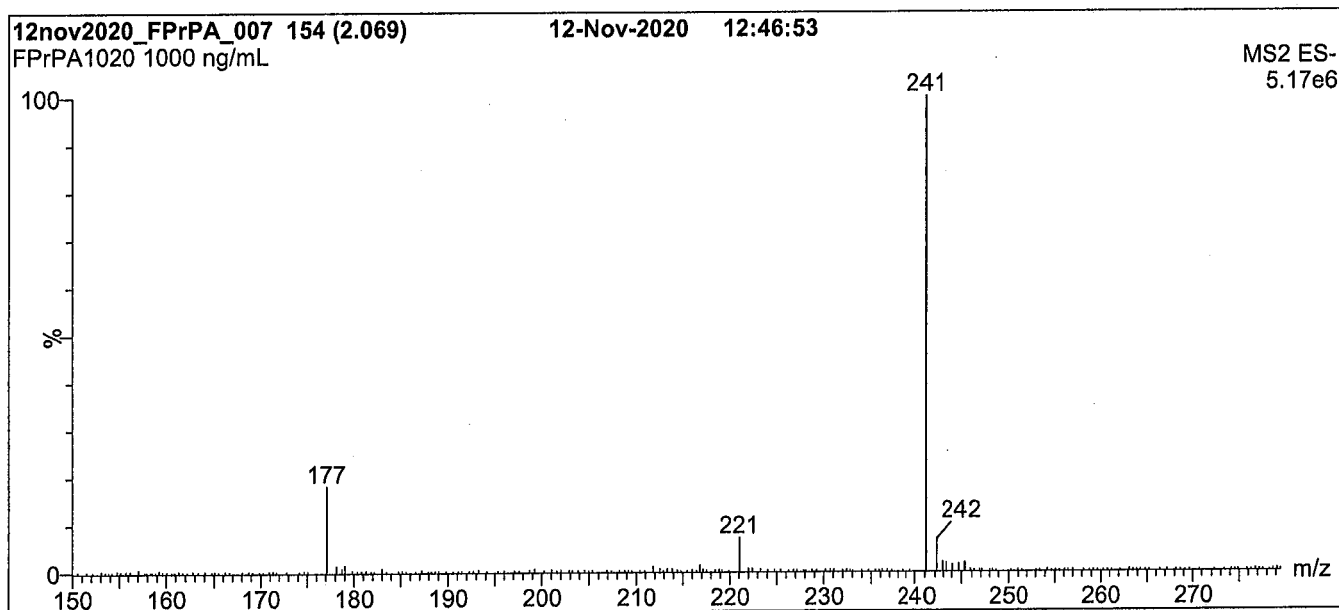
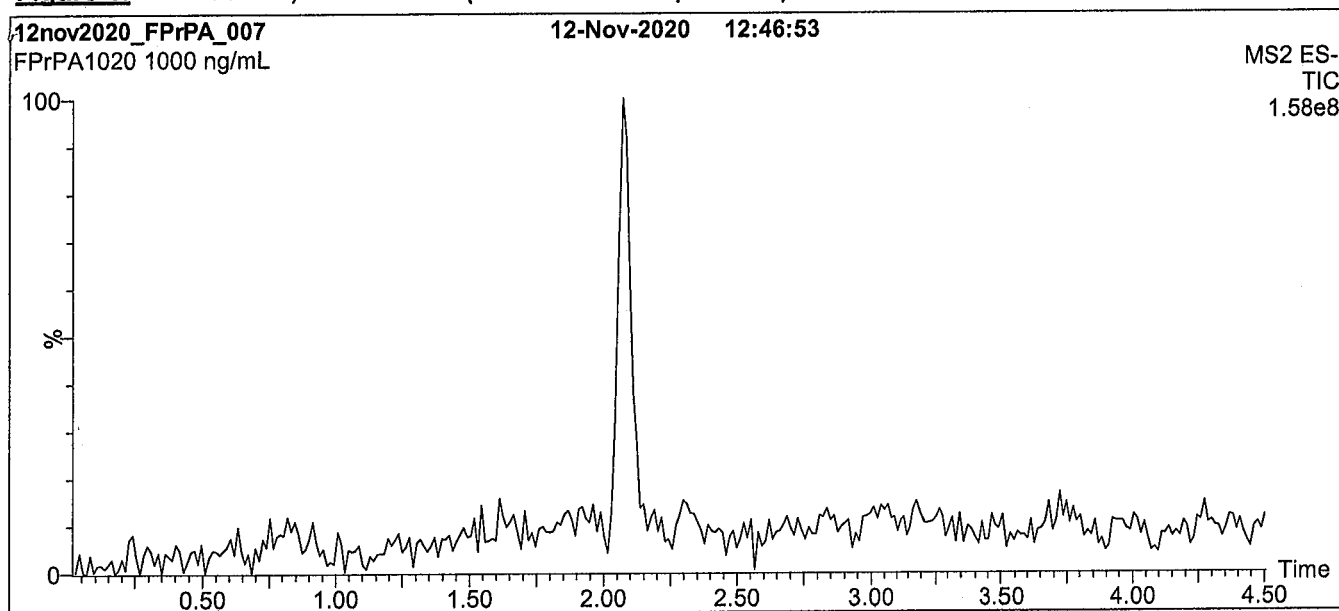
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Figure 1: FPrPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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)

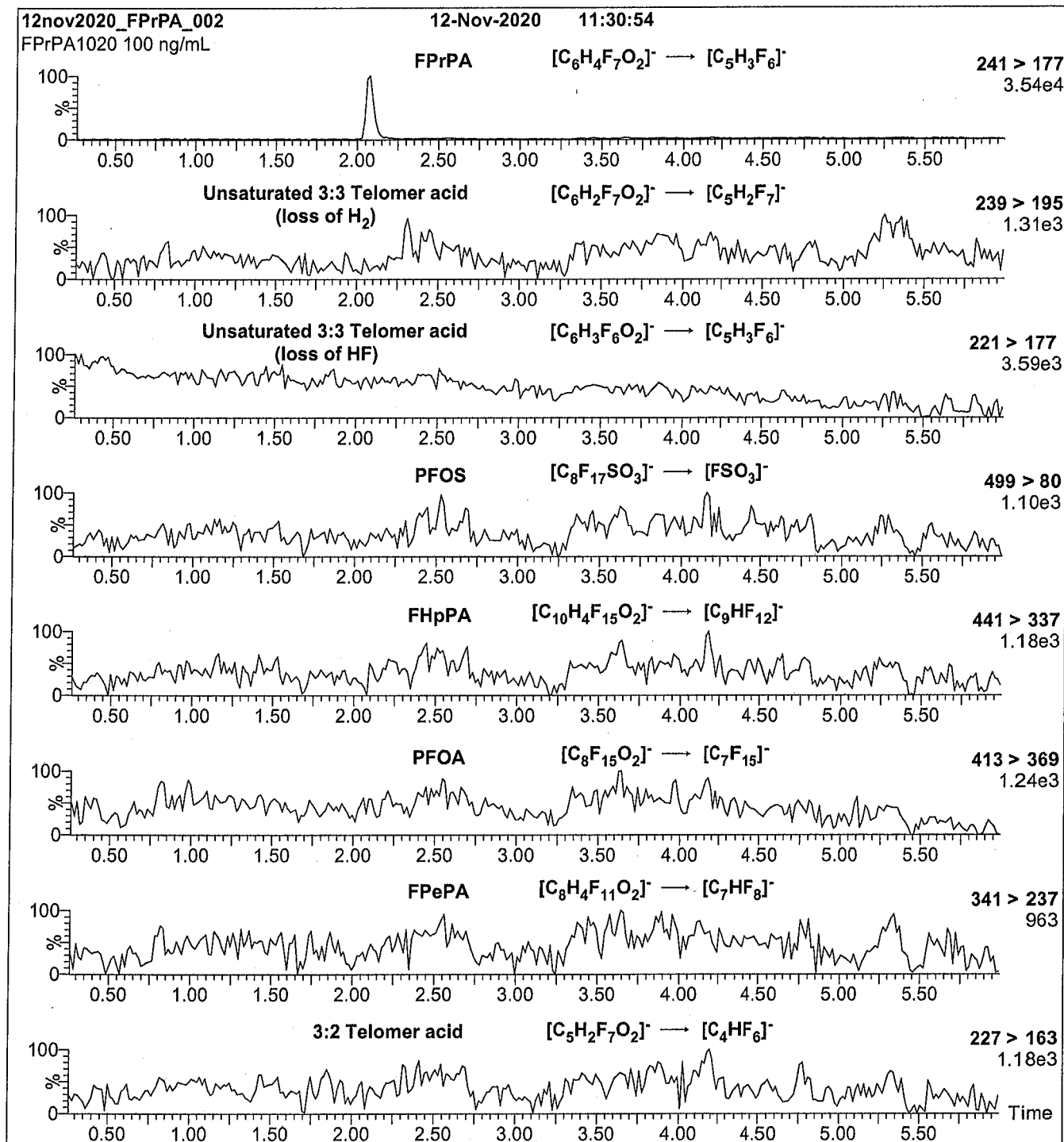
Source: Electrospray (negative)

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		

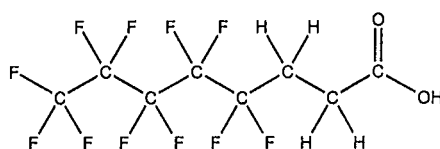
Analyte	Parent	CAS Number	Concentration	Units
3:3 FTA		113507-82-7	50	ug/mL



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)

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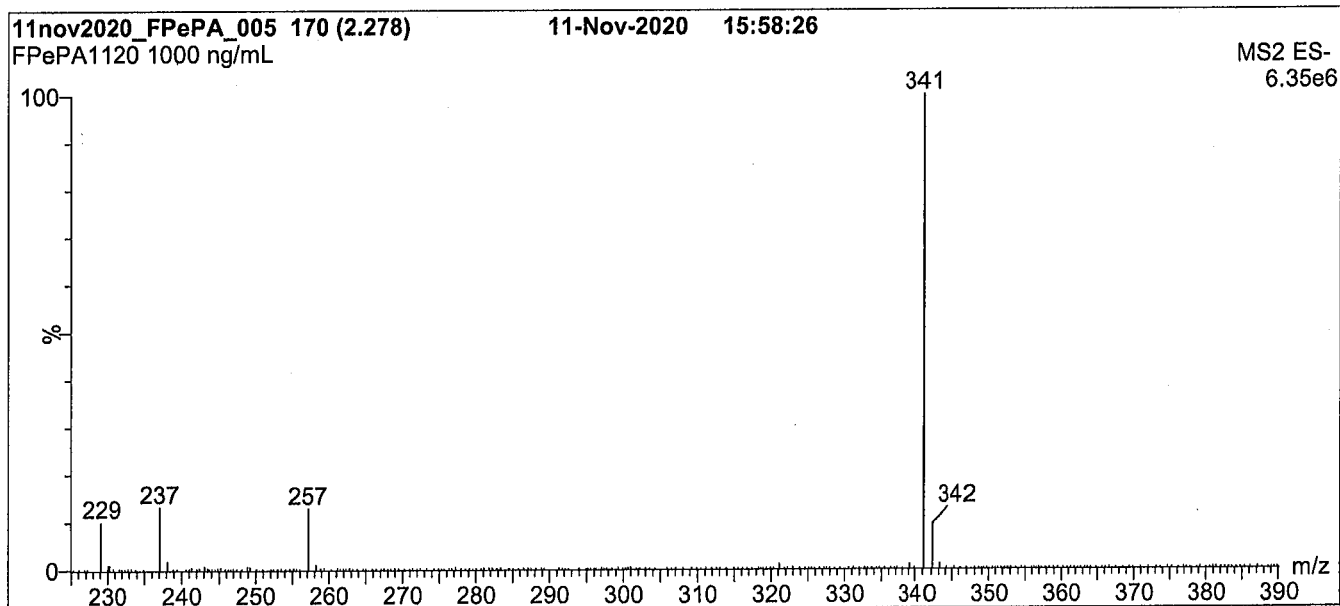
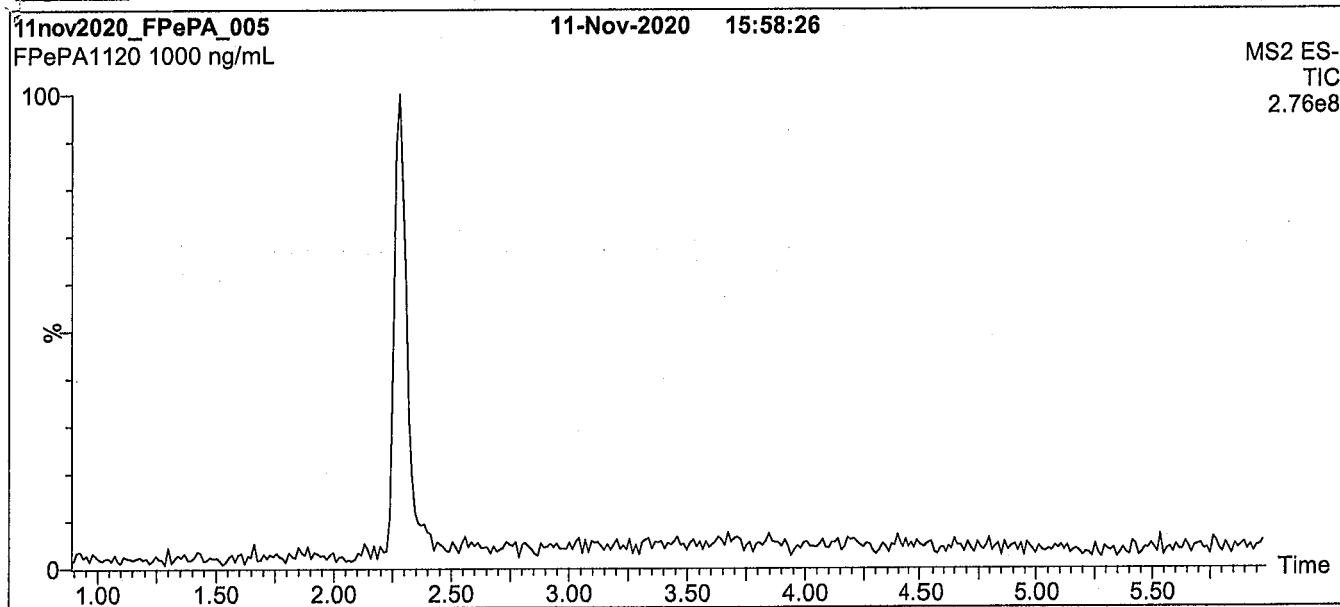
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Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

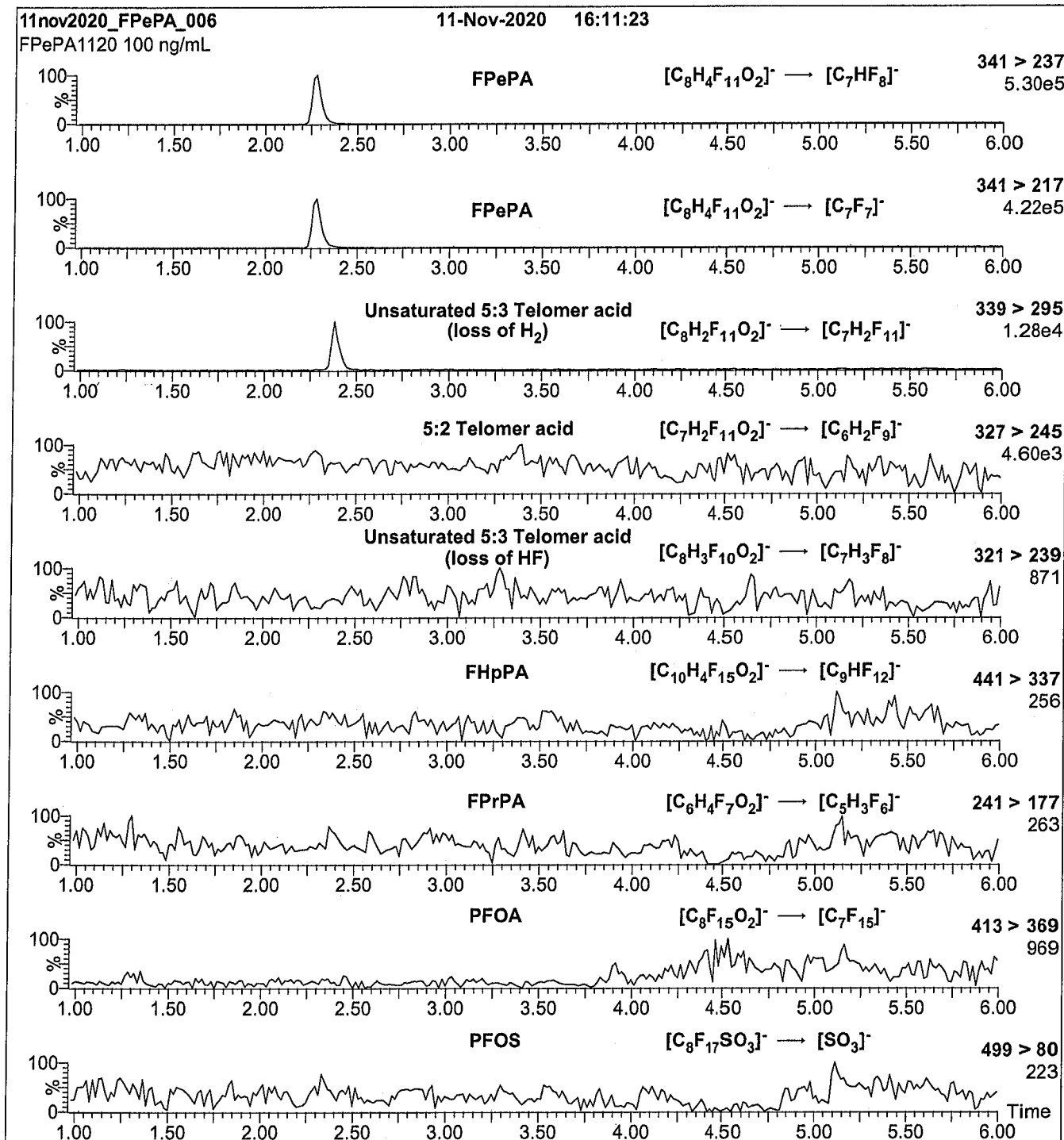
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

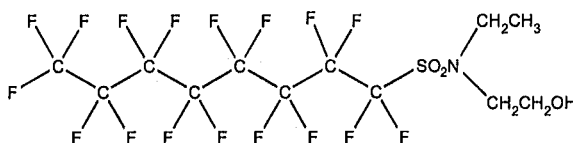


WELLINGTON LABORATORIES

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)

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HOMOGENEITY:

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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:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

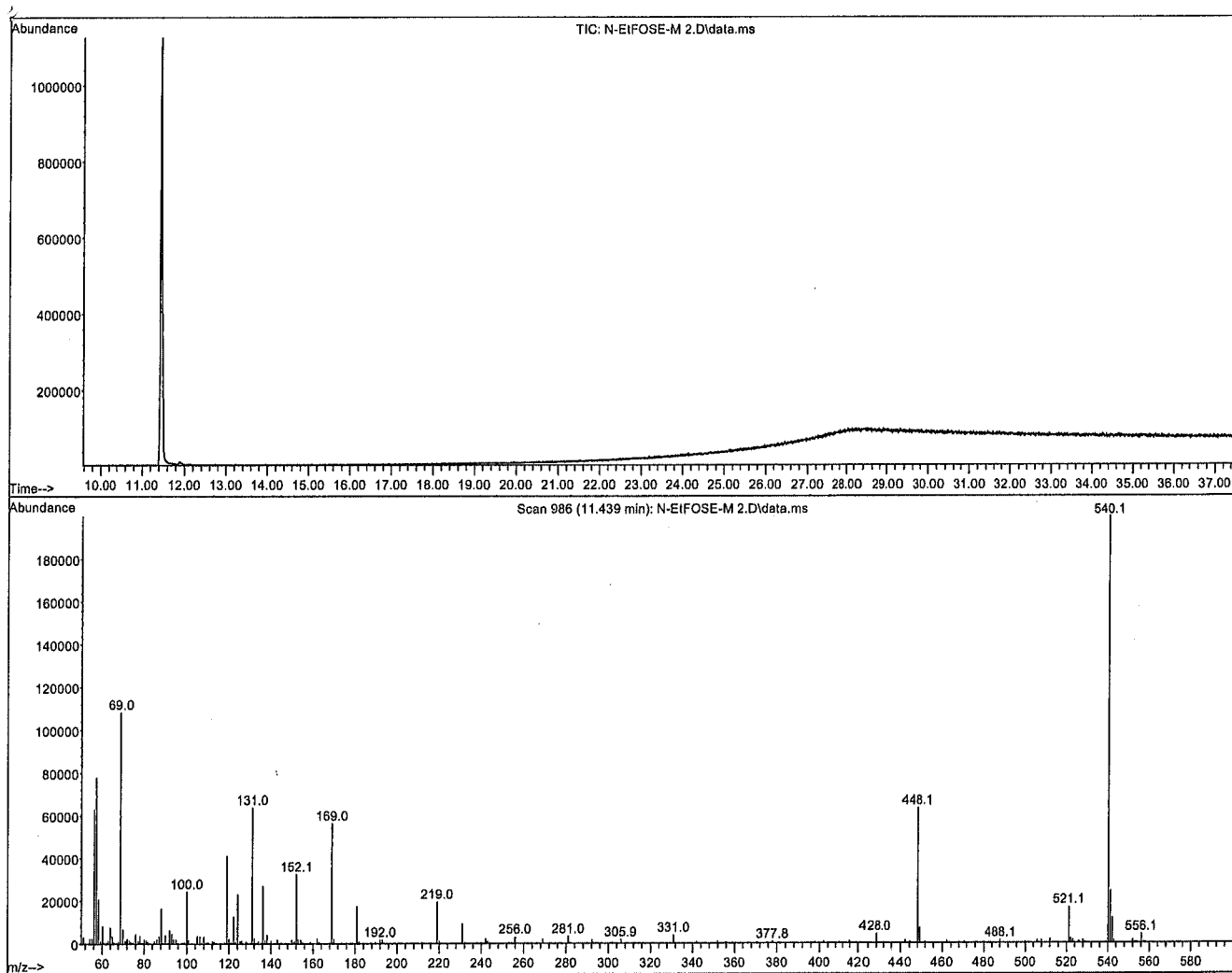
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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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

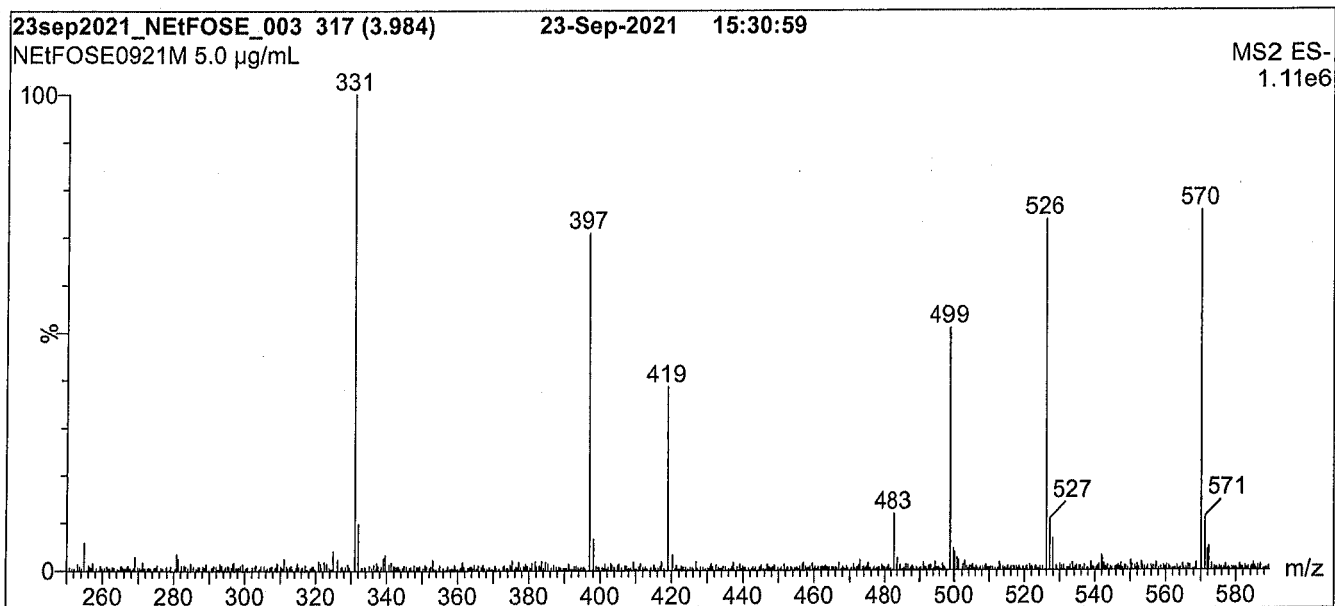
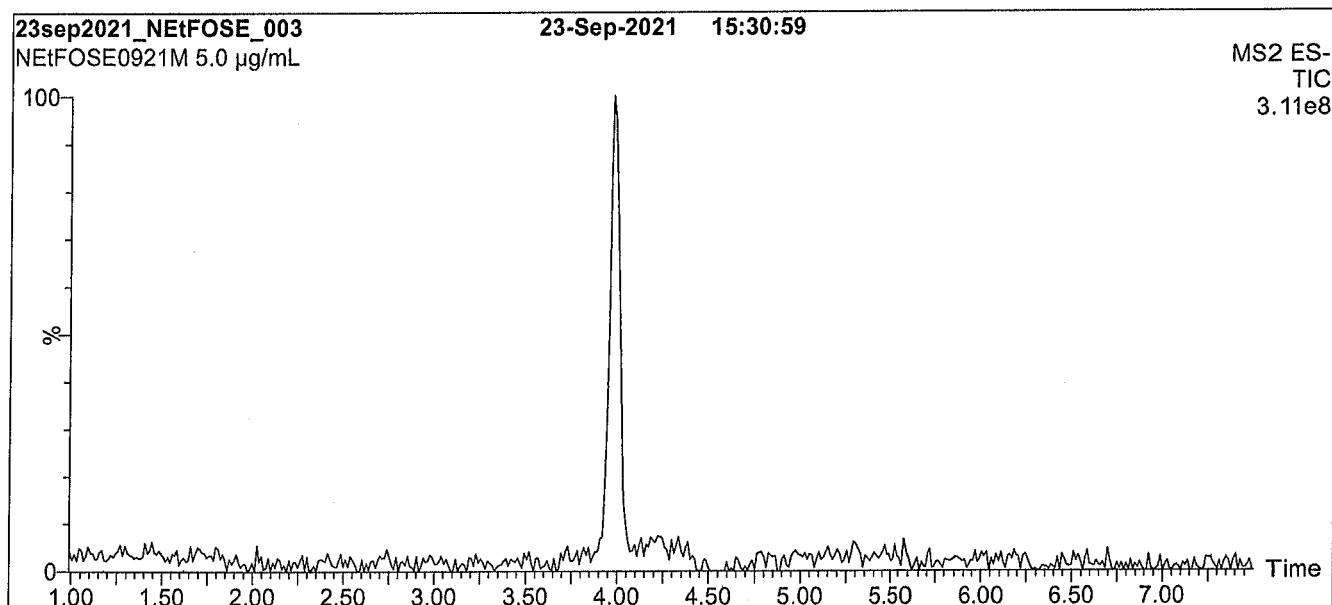
Flow: Constant at 1 mL/min

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)

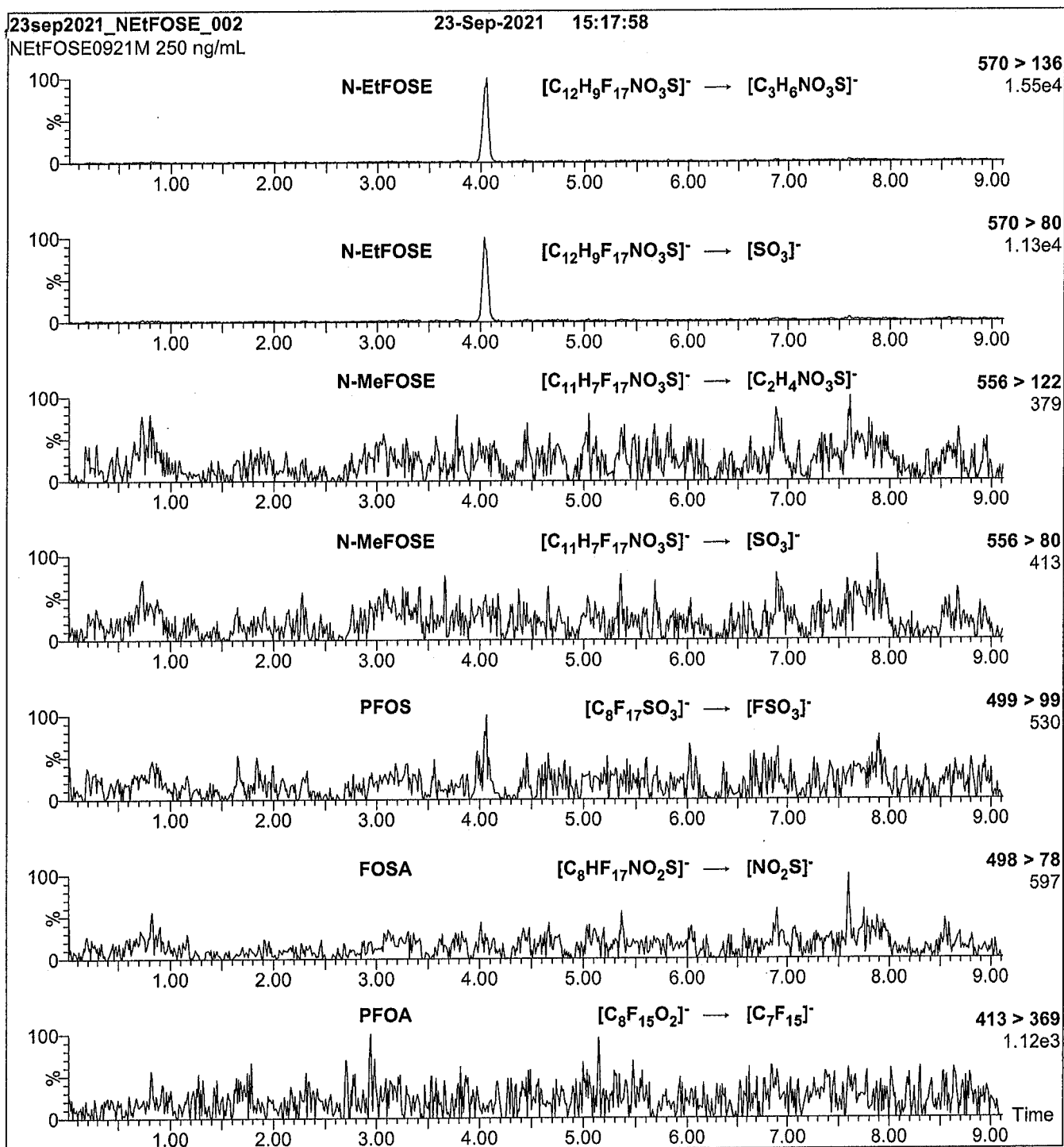
Source: Electrospray (negative)

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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t

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

INTENDED USE:

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HANDLING:

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HOMOGENEITY:

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

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LIMITED WARRANTY:

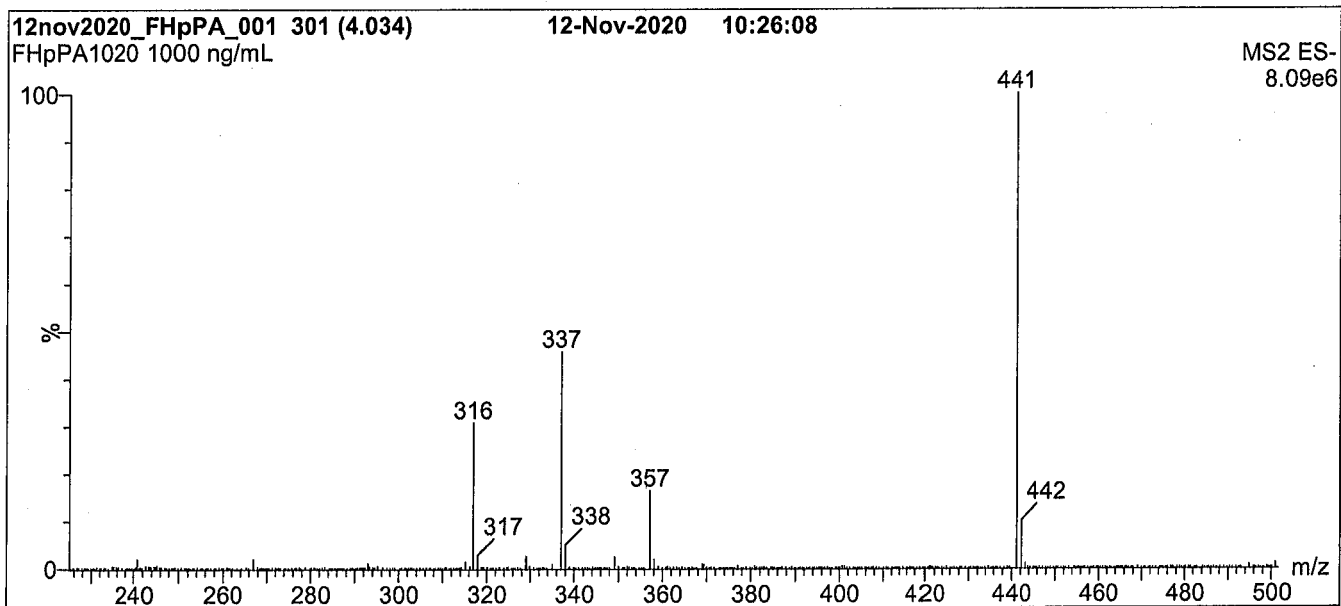
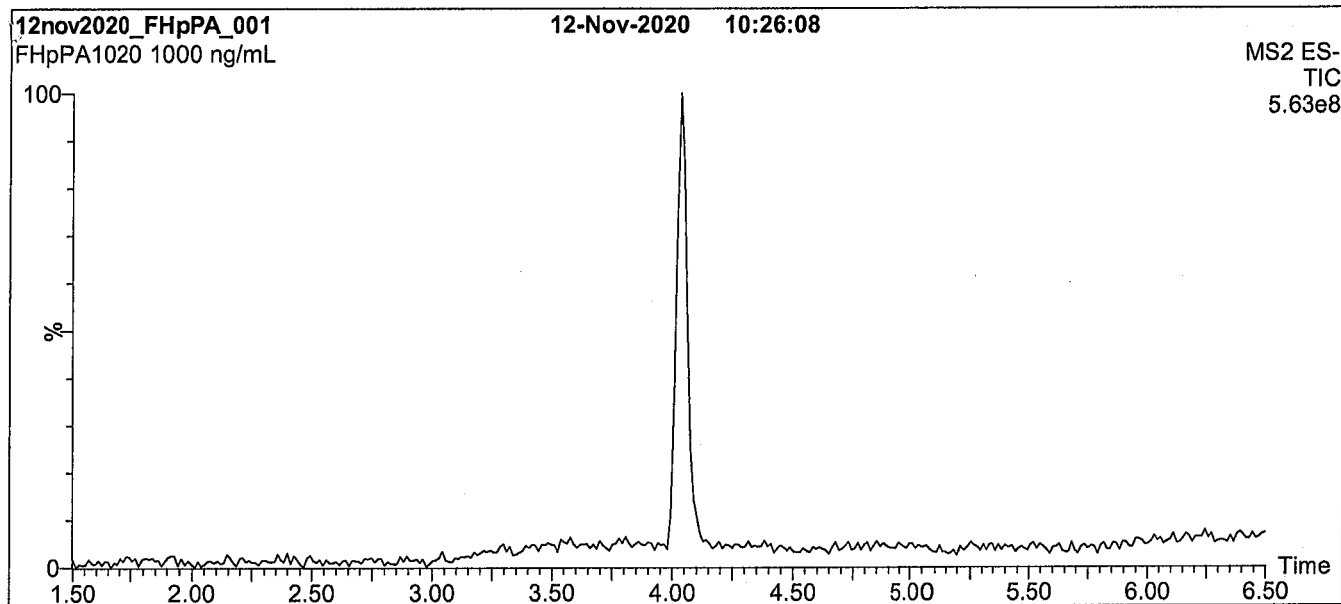
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QUALITY MANAGEMENT:

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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

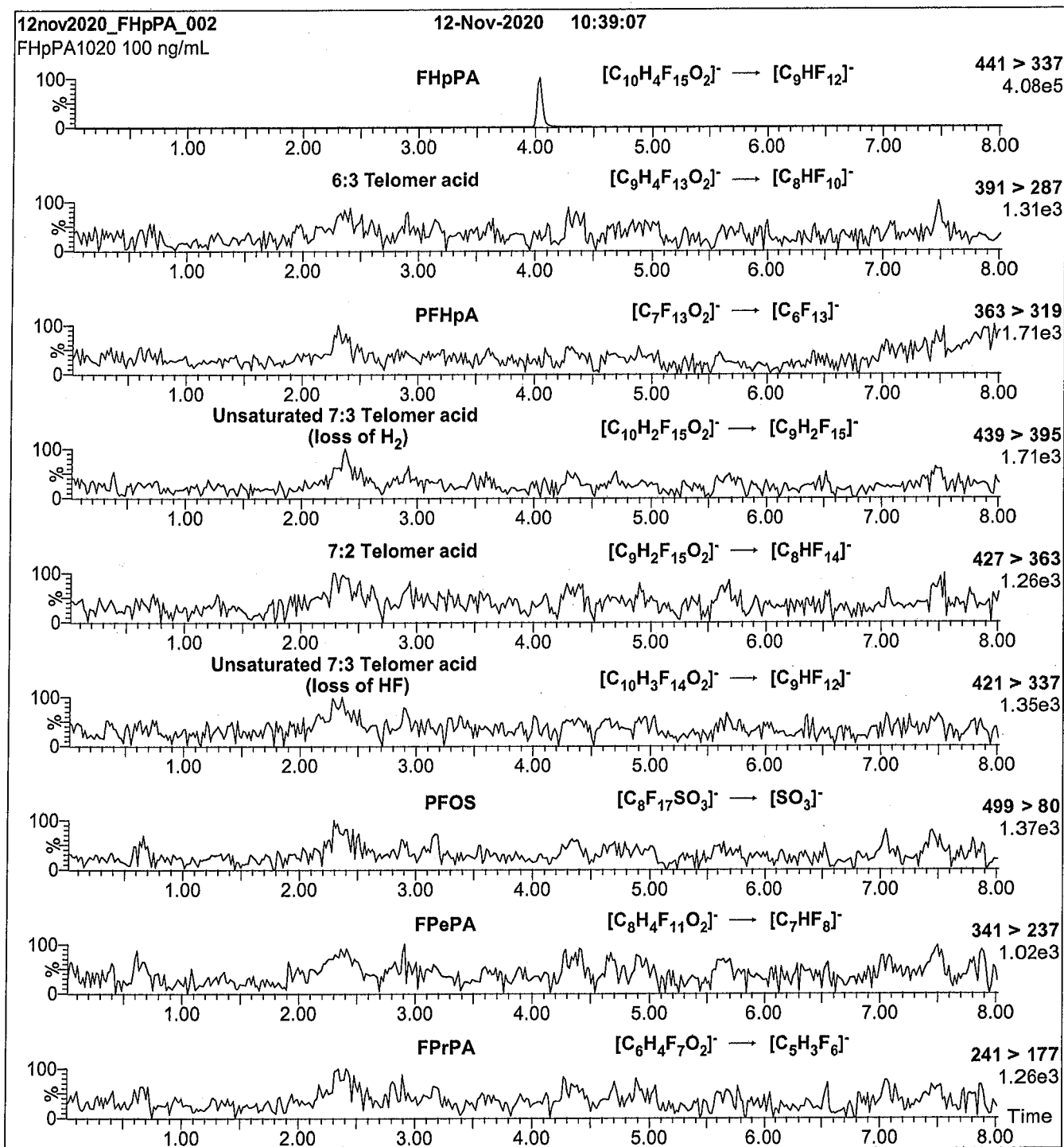
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

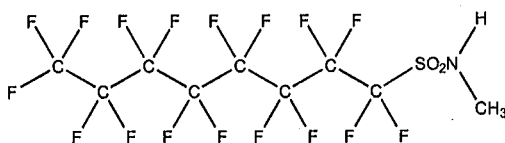


WELLINGTON LABORATORIES

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: 
 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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HANDLING:

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LIMITED WARRANTY:

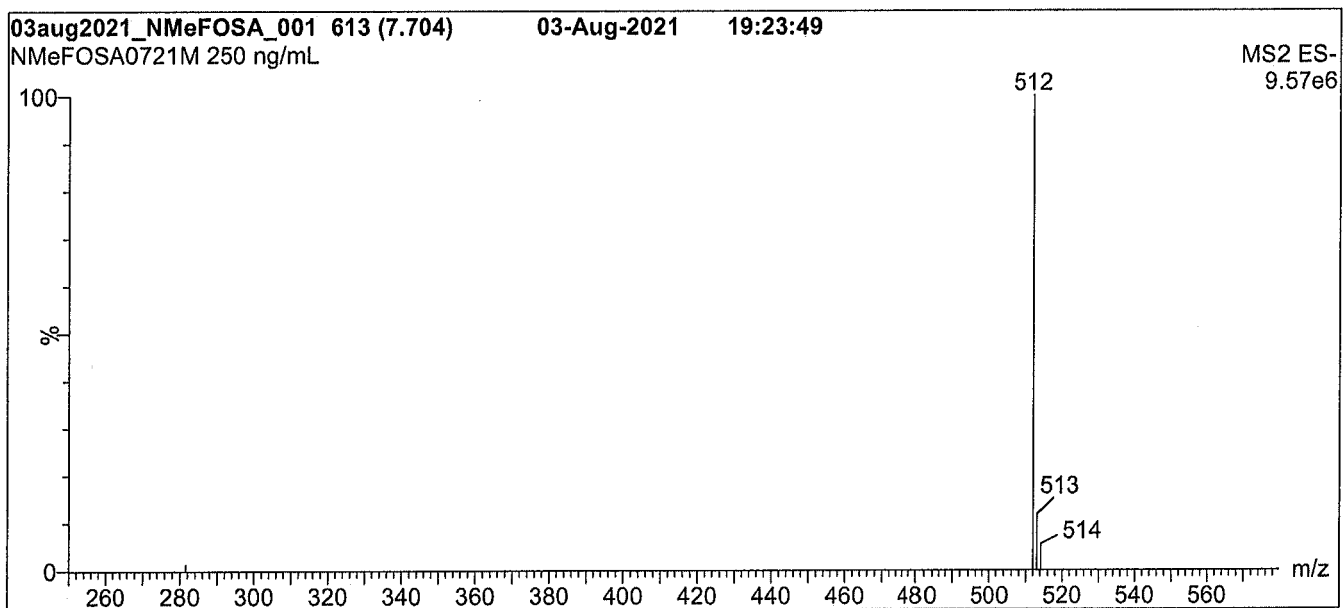
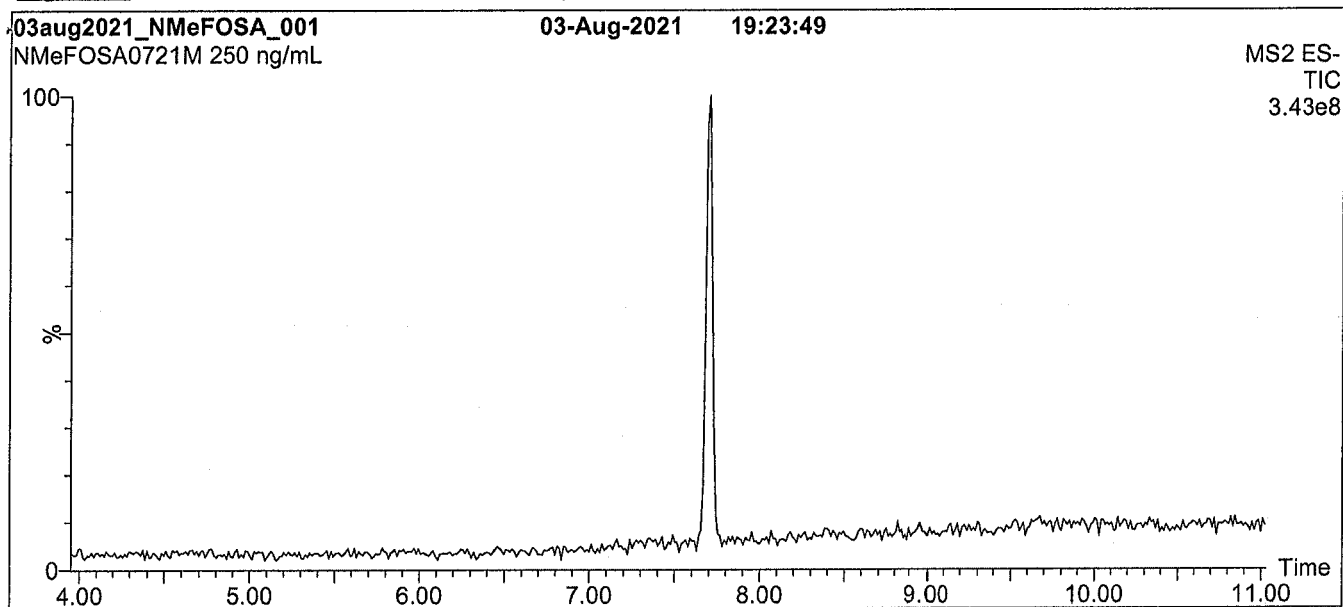
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QUALITY MANAGEMENT:

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Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

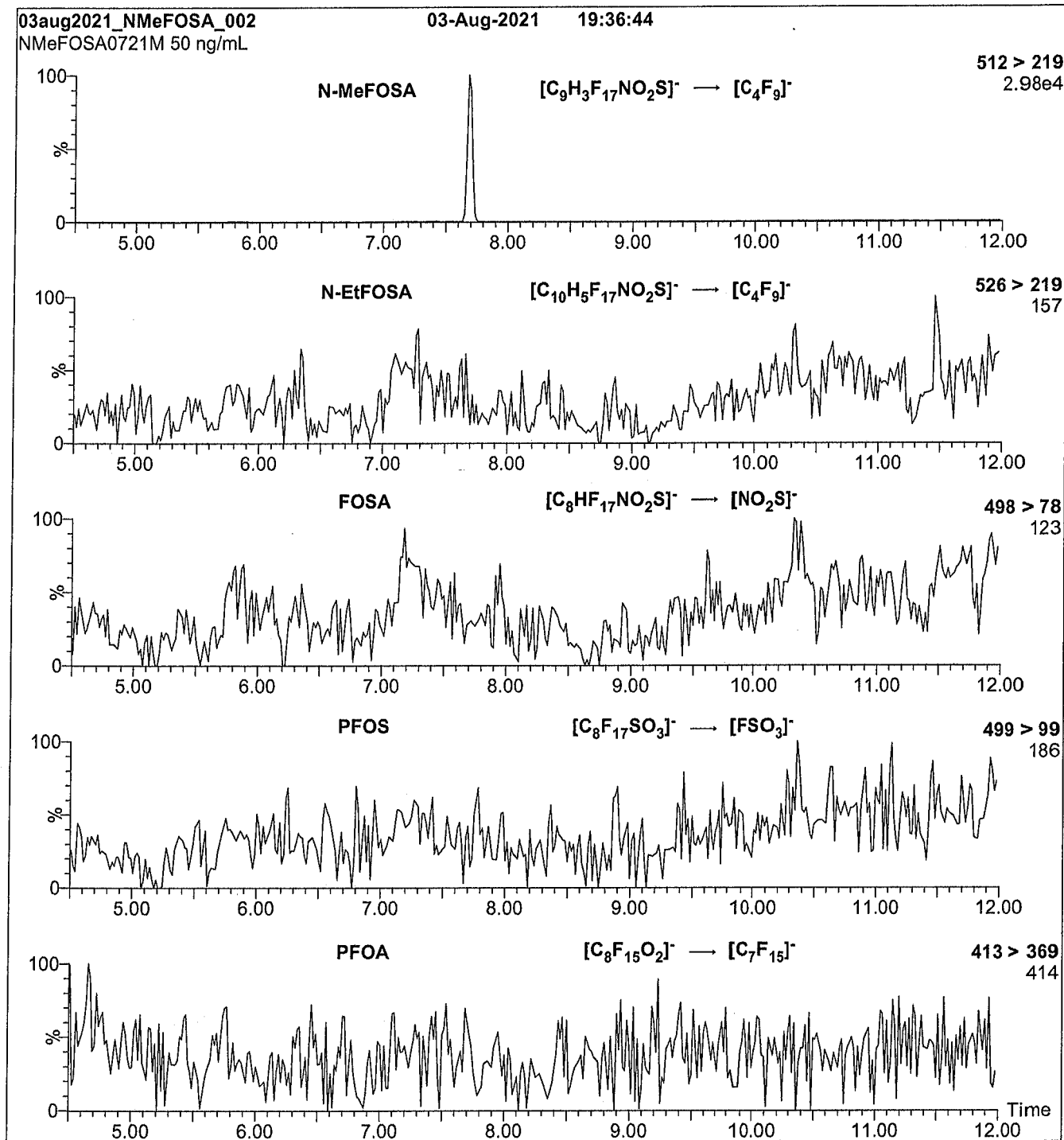
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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 ($^{\circ}$ 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

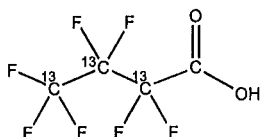


WELLINGTON LABORATORIES

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

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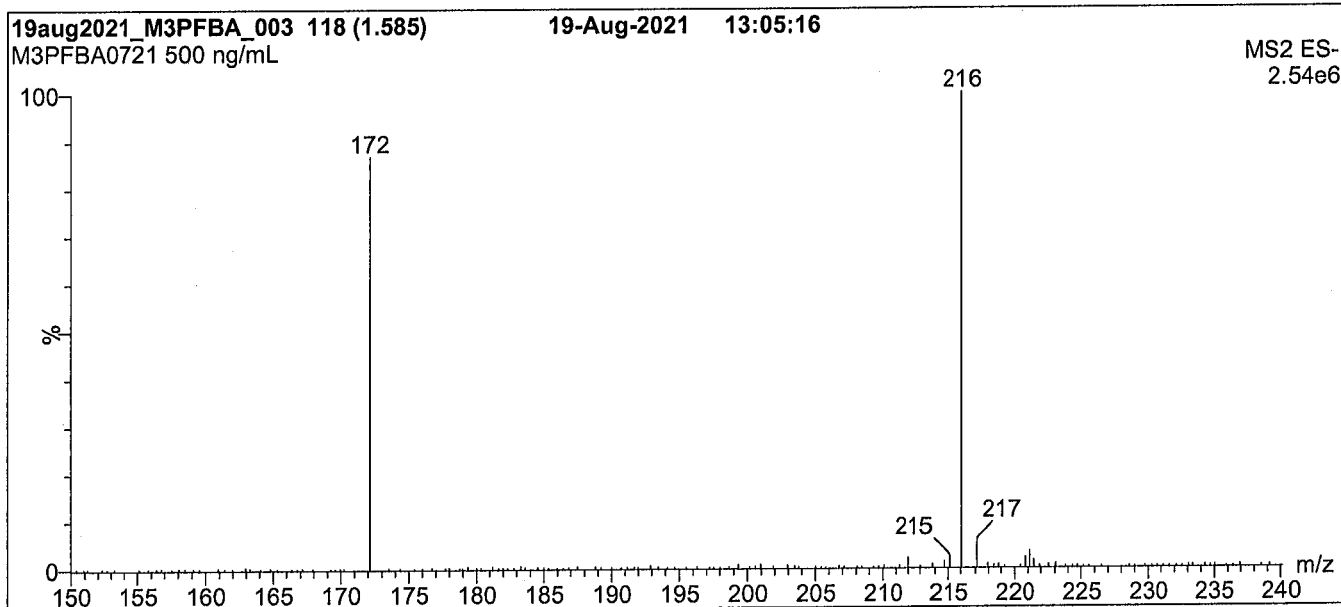
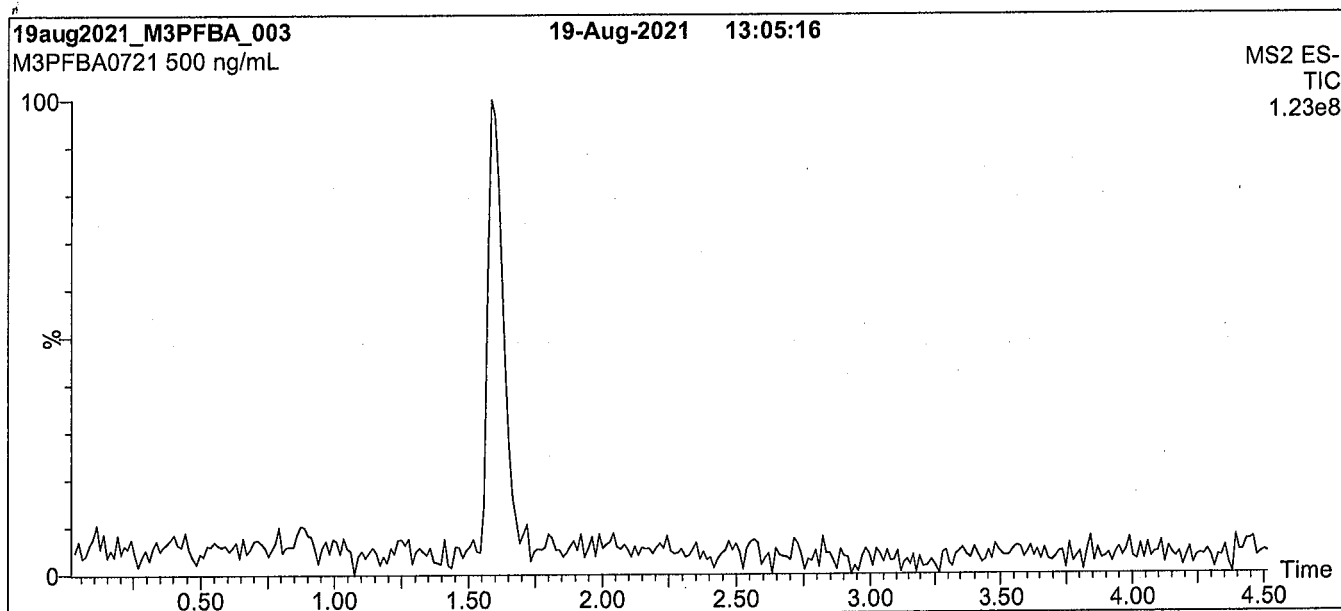
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Figure 1: M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

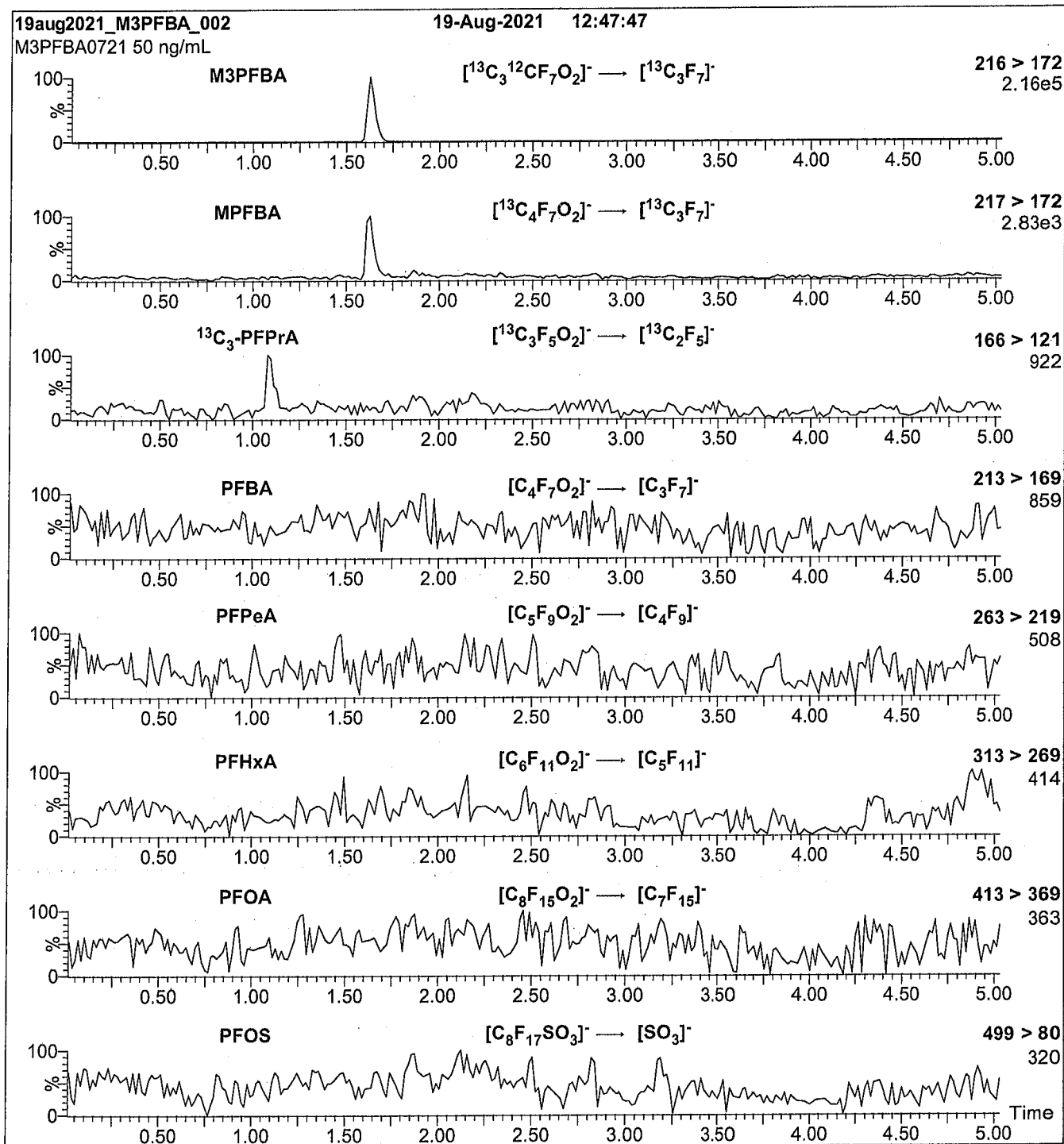
Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 12 min

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

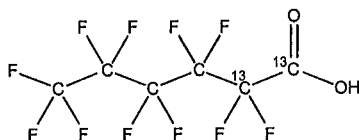
Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA		13C3-PFBA	50	ug/mL



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

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:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

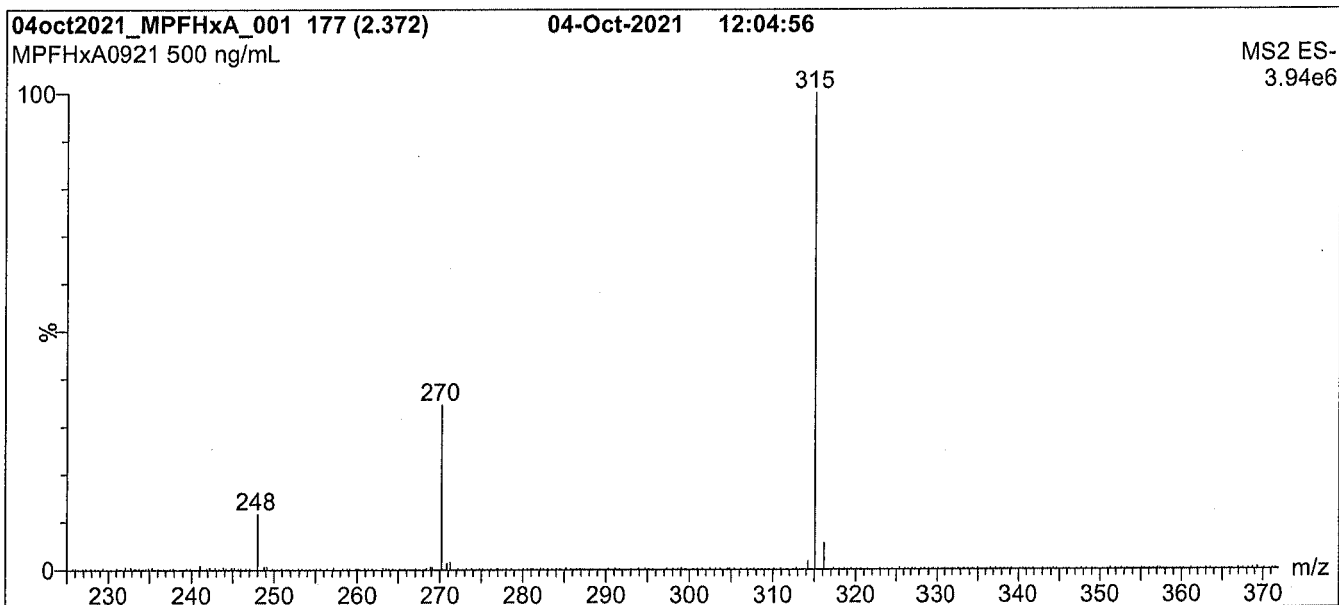
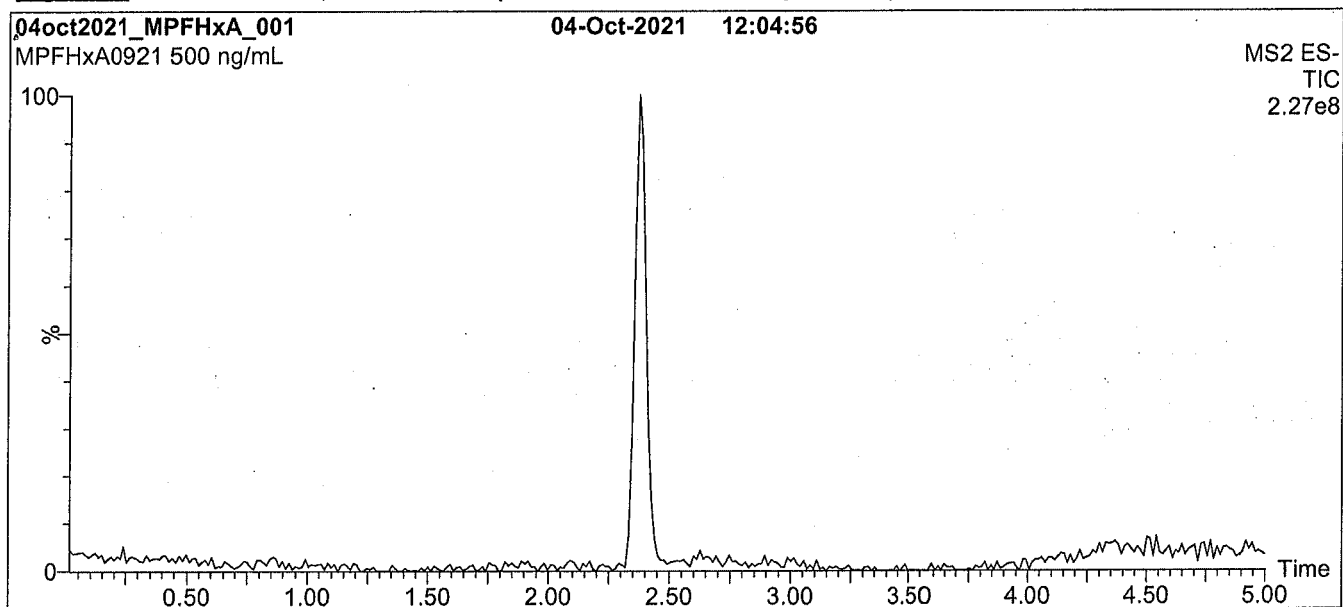
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

Chromatographic Conditions:

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

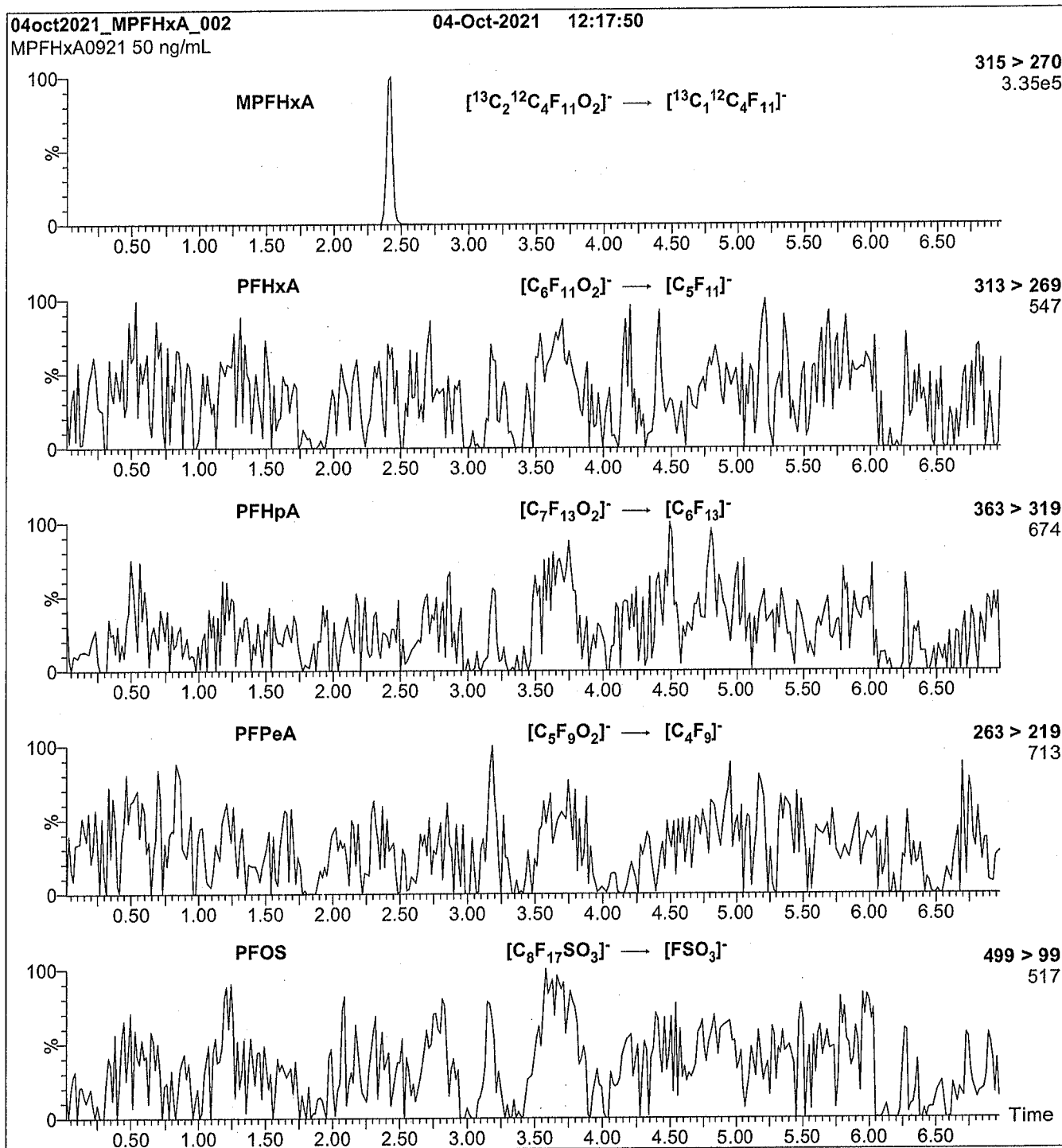
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

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 (°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
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

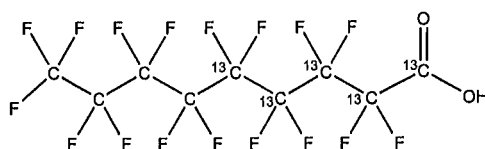
Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL



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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 11/01/2021
 (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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HOMOGENEITY:

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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:

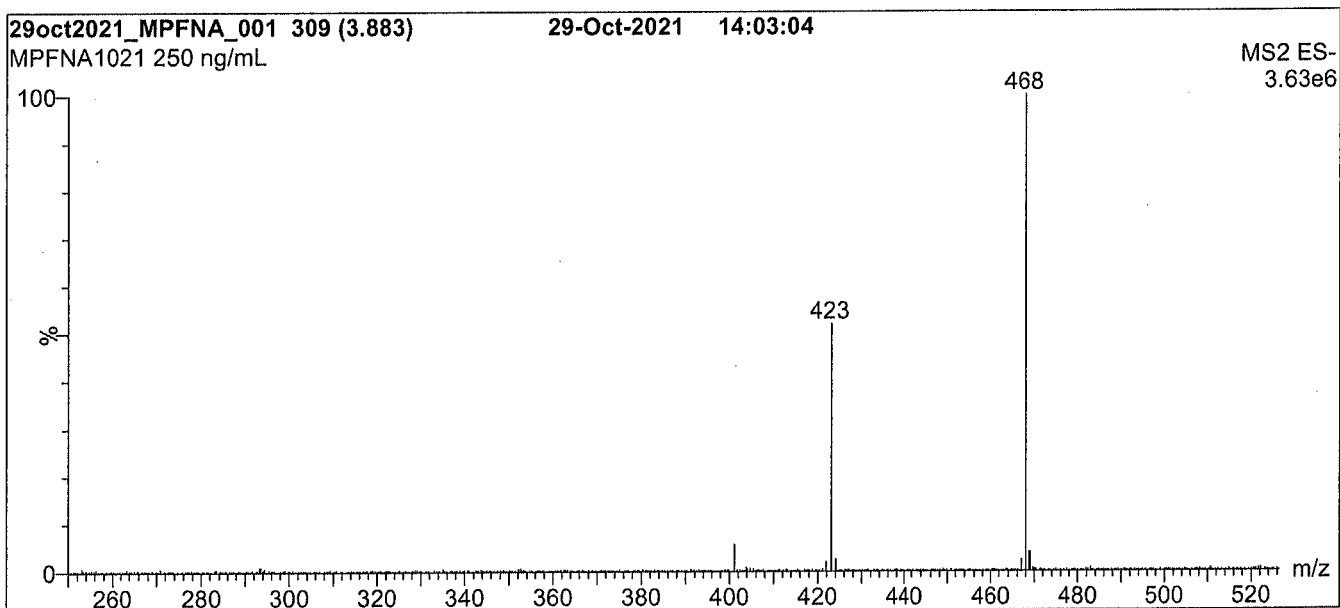
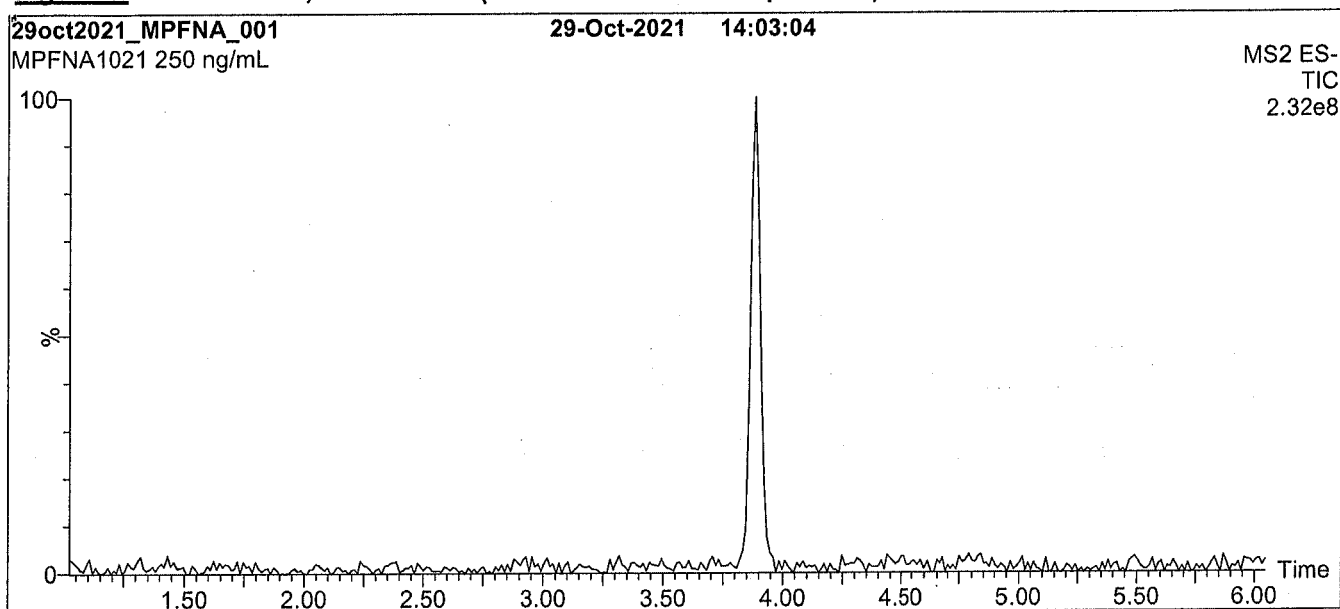
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QUALITY MANAGEMENT:

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Figure 1: 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

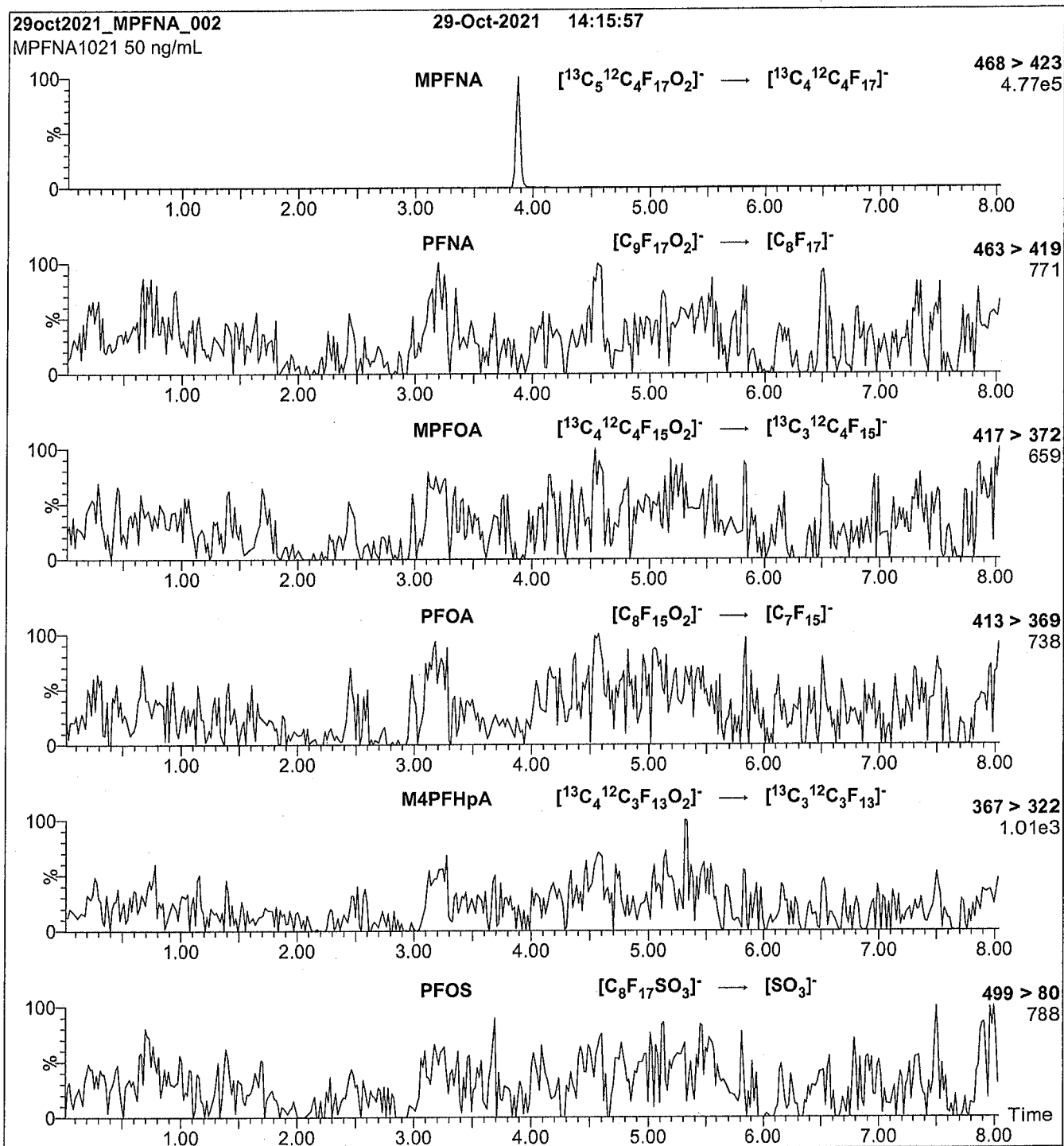
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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 (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

Analytical Standard Record

22A0118

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

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

Analytical Standard Record

22A0118

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

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

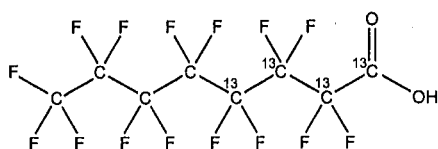
**WELLINGTON
LABORATORIES****CERTIFICATE OF ANALYSIS
DOCUMENTATION**

PRODUCT CODE: MPFOA
COMPOUND: Perfluoro-n-(1,2,3,4-¹³C₄)octanoic acid

LOT NUMBER: MPFOA1121

STRUCTURE:

CAS #: 960315-48-4



MOLECULAR FORMULA: ¹³C₄¹²C₄HF₁₅O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 418.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026

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

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/20/2021
(mm/dd/yyyy)

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

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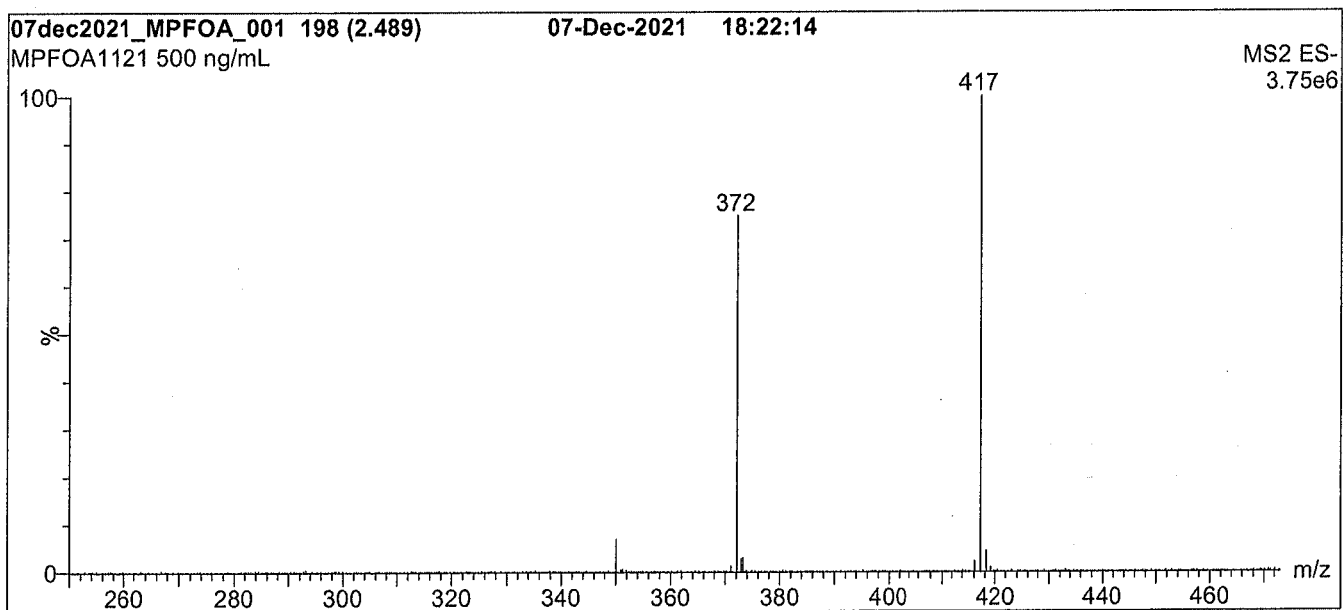
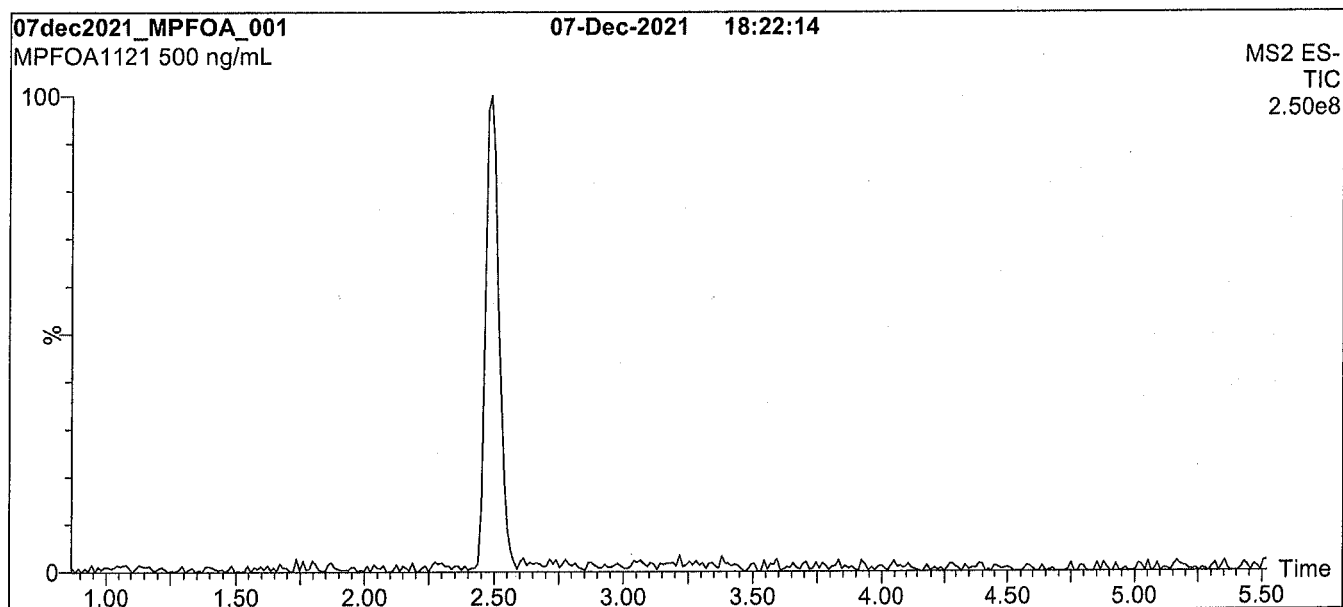
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Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

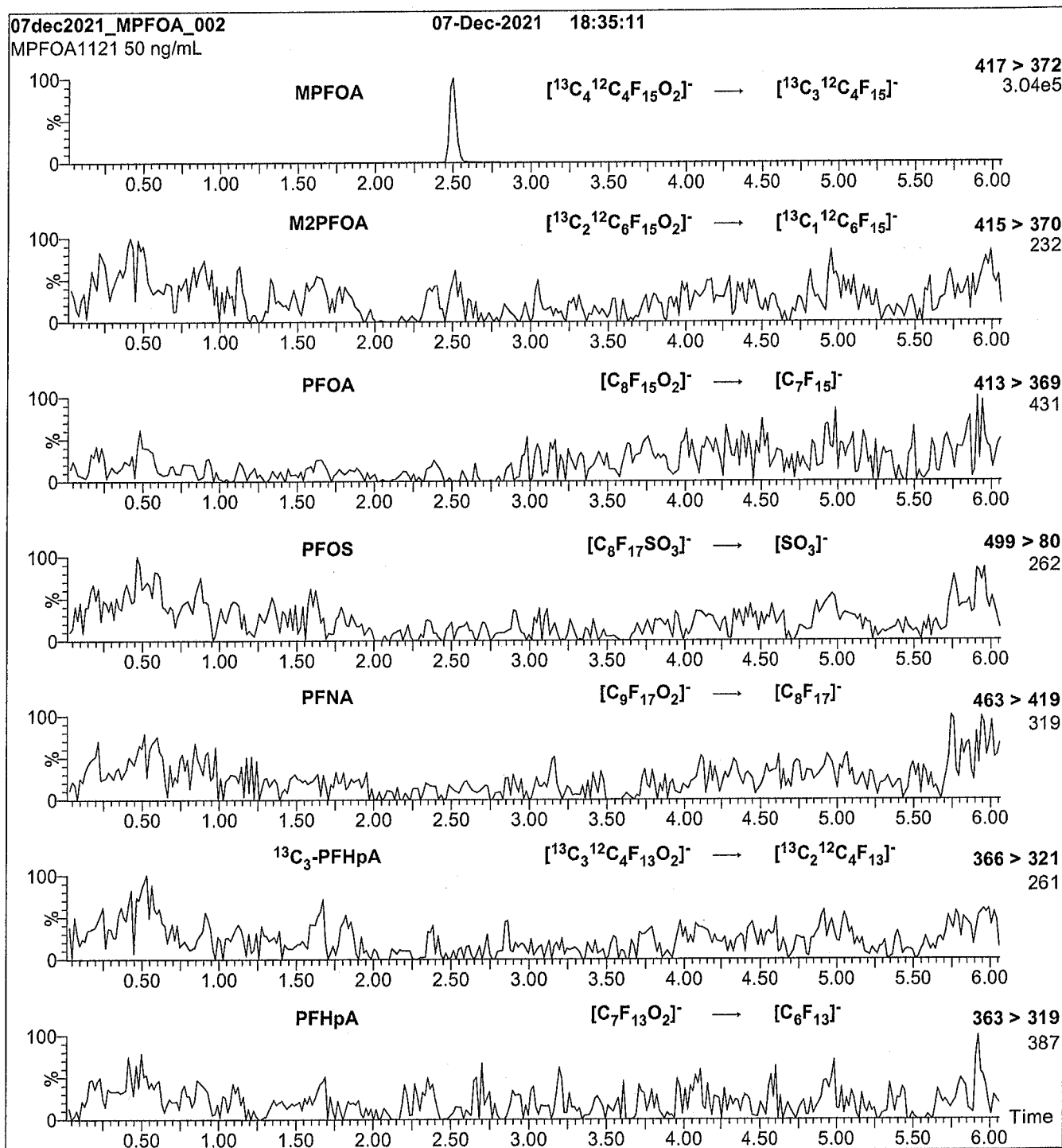
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

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

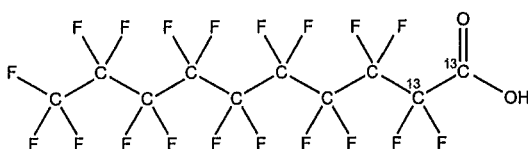


WELLINGTON LABORATORIES

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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HOMOGENEITY:

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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:

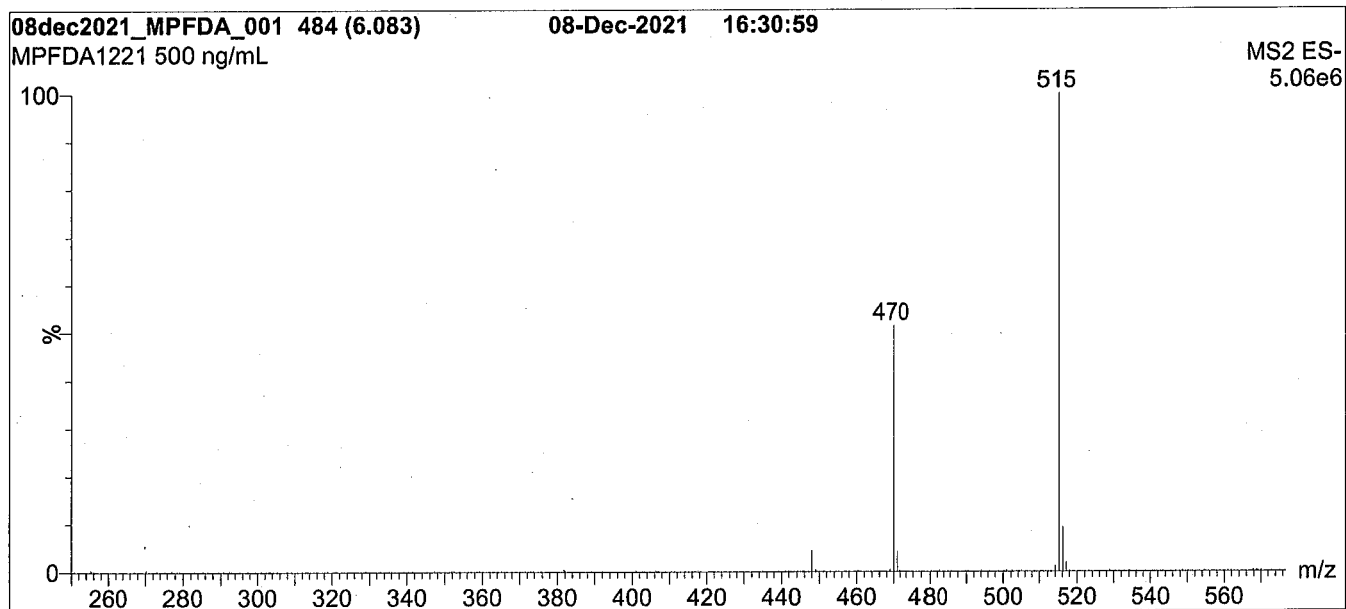
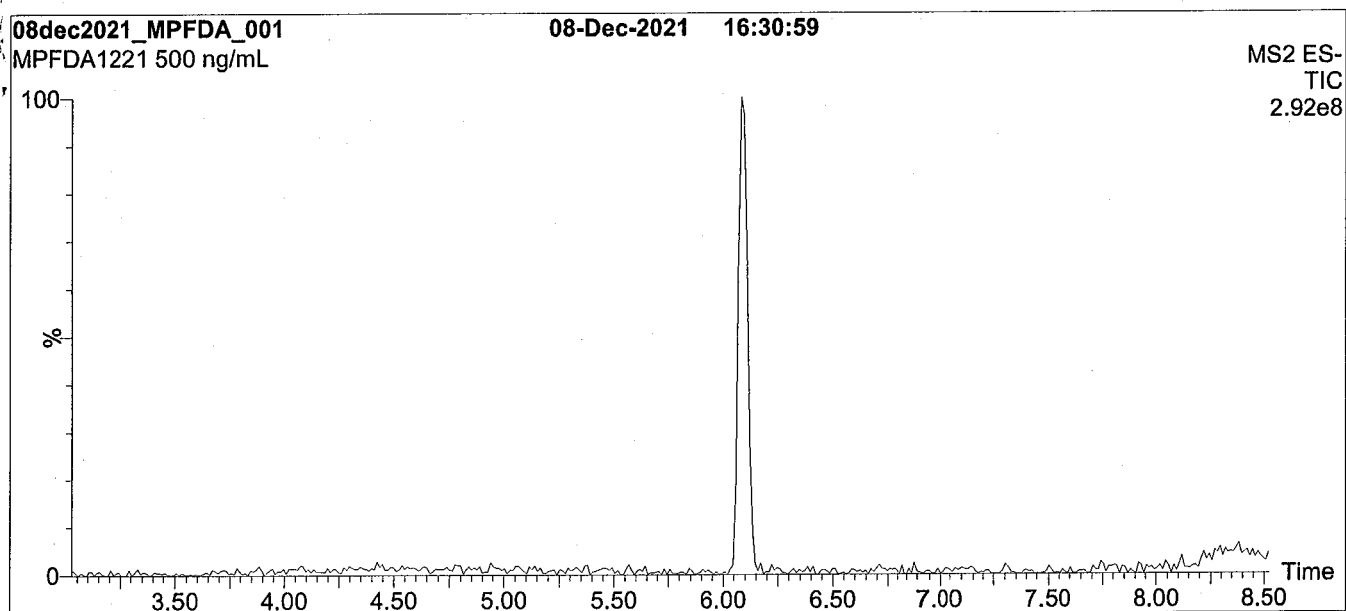
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QUALITY MANAGEMENT:

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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

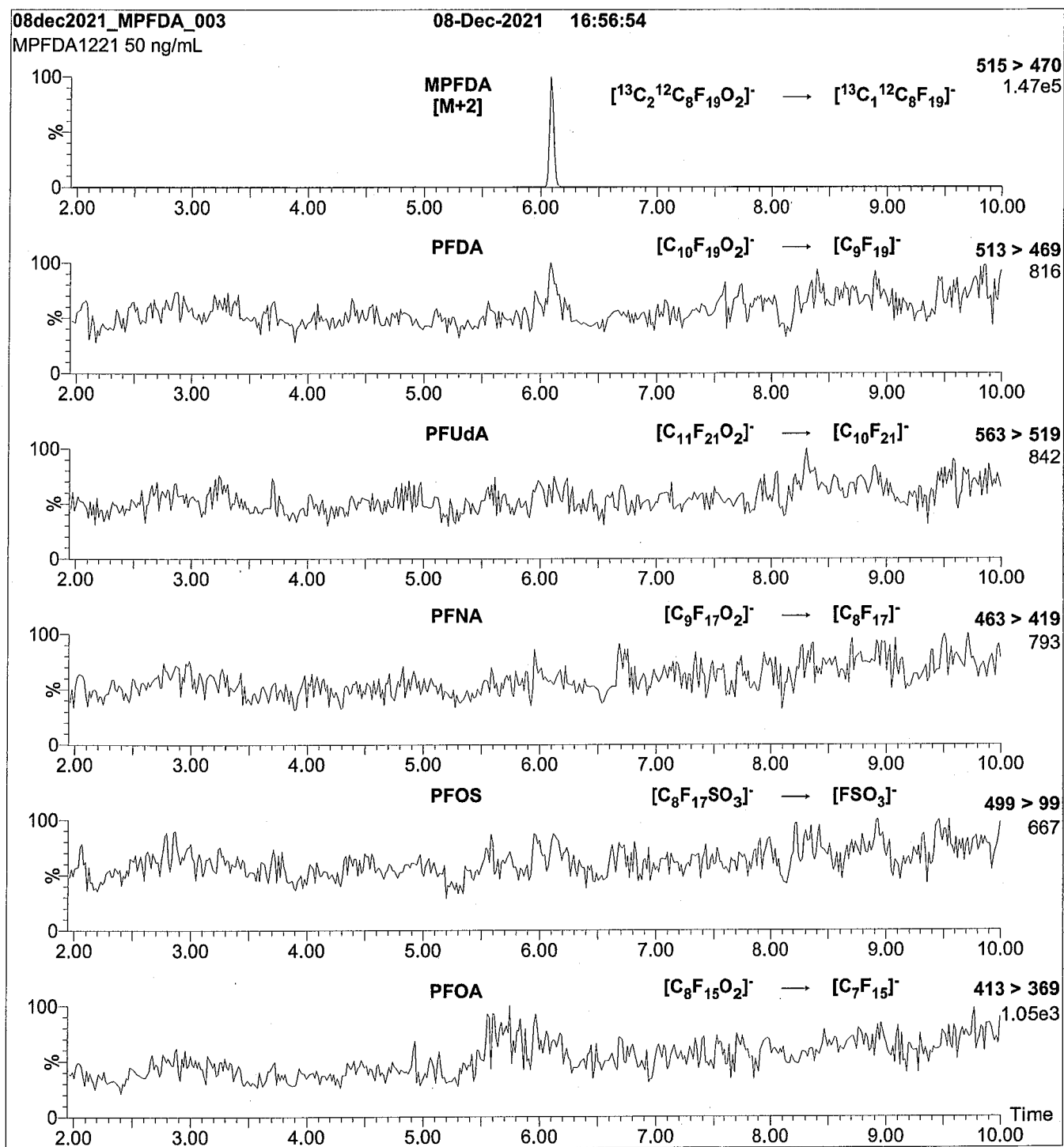
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

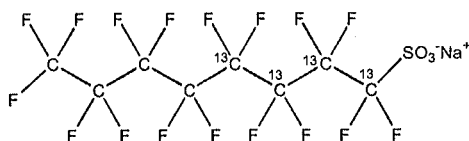


WELLINGTON LABORATORIES

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

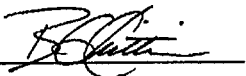
DOCUMENTATION/ DATA ATTACHED:

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)

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LIMITED WARRANTY:

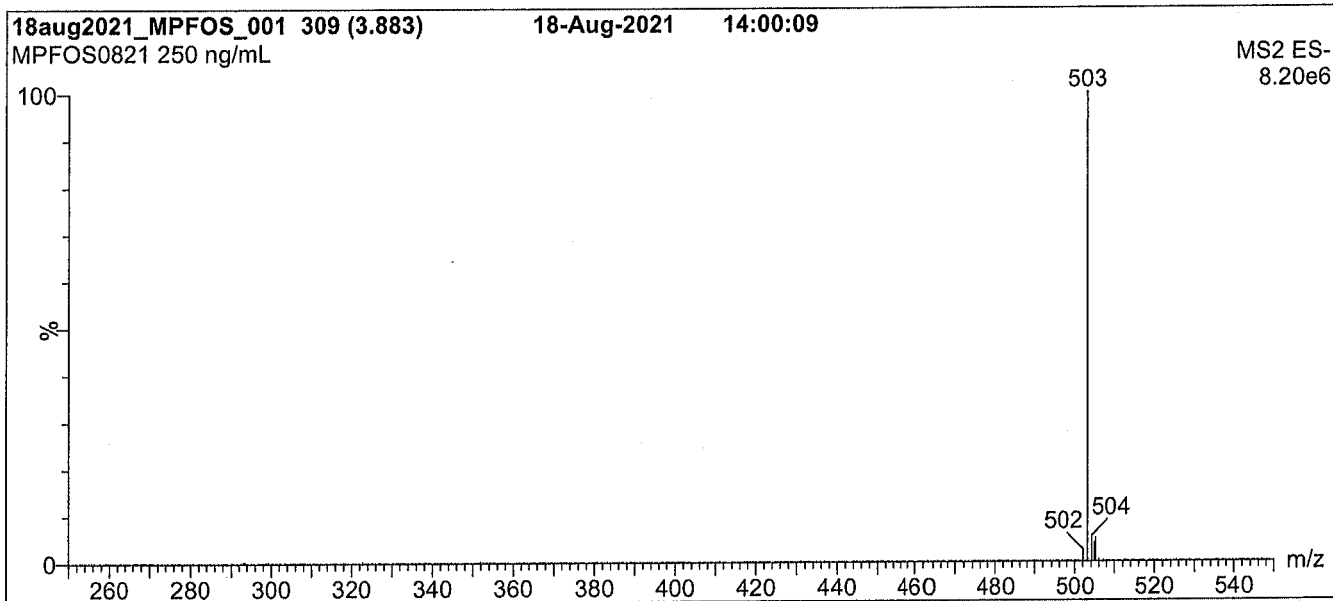
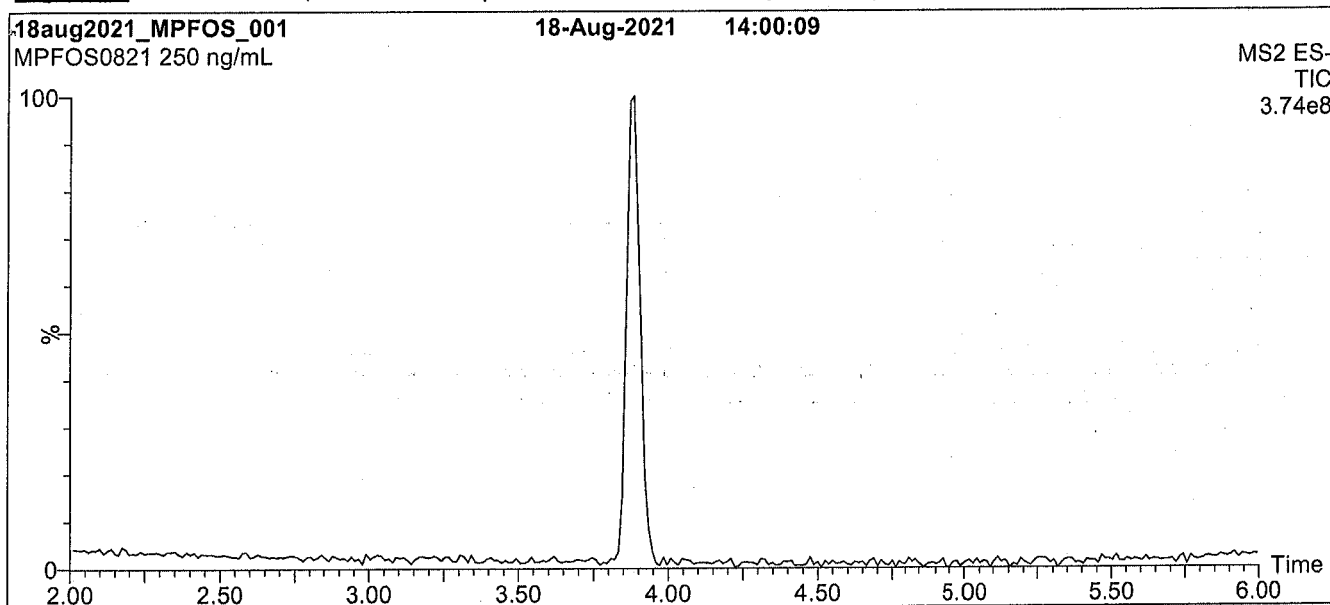
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Figure 1: MPFOS; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

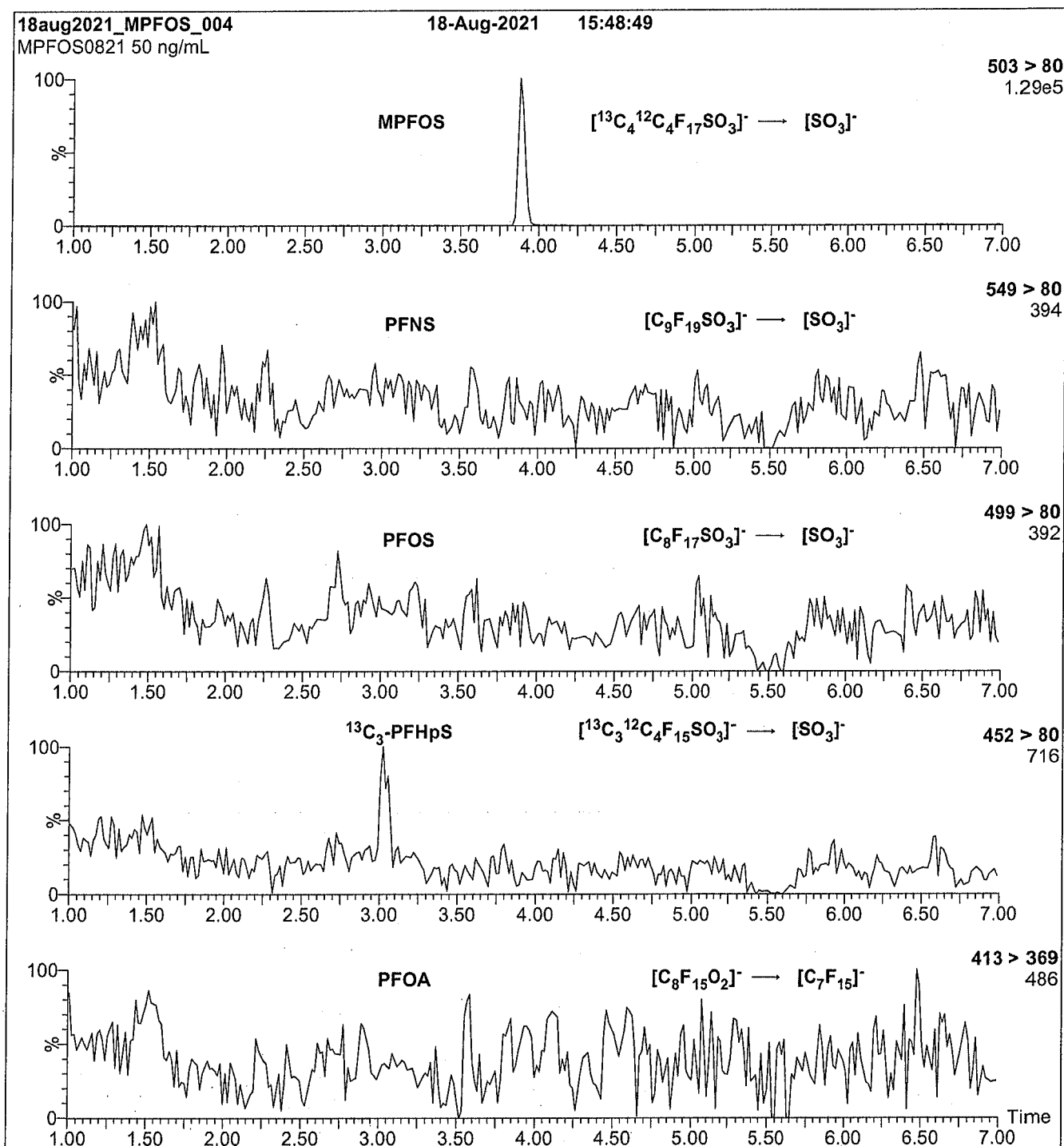
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

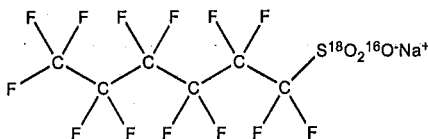


WELLINGTON LABORATORIES

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.

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Certified By: 
 B.G. Chittim, General Manager

Date: 11/05/2021
 (mm/dd/yyyy)

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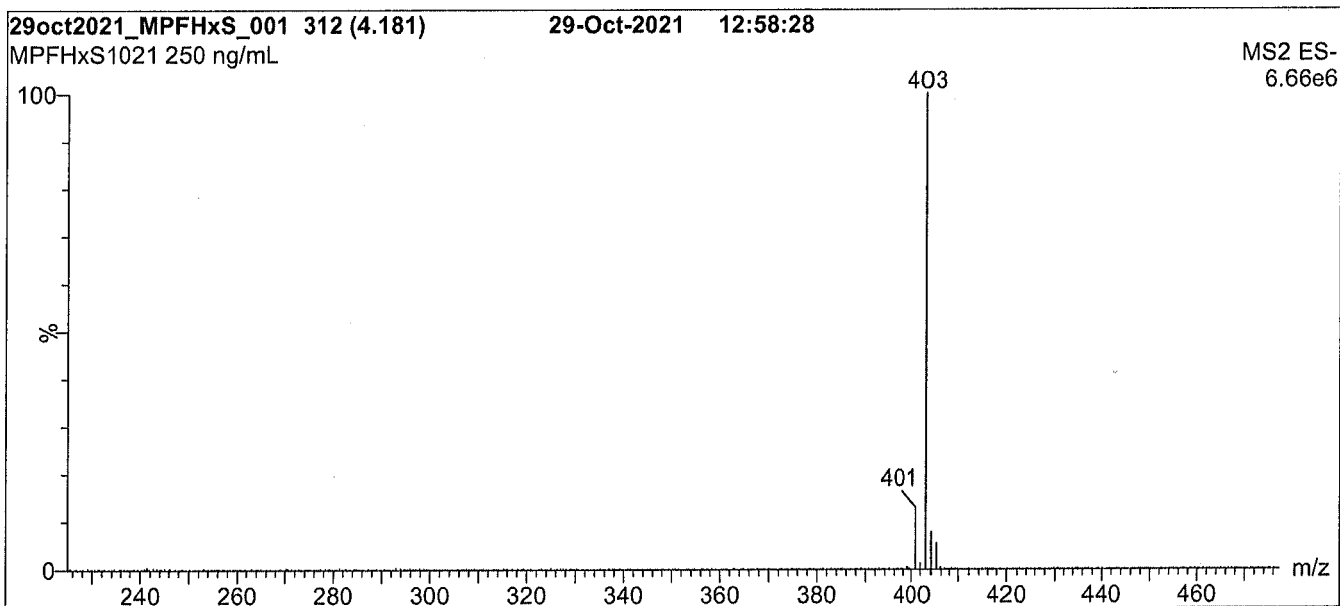
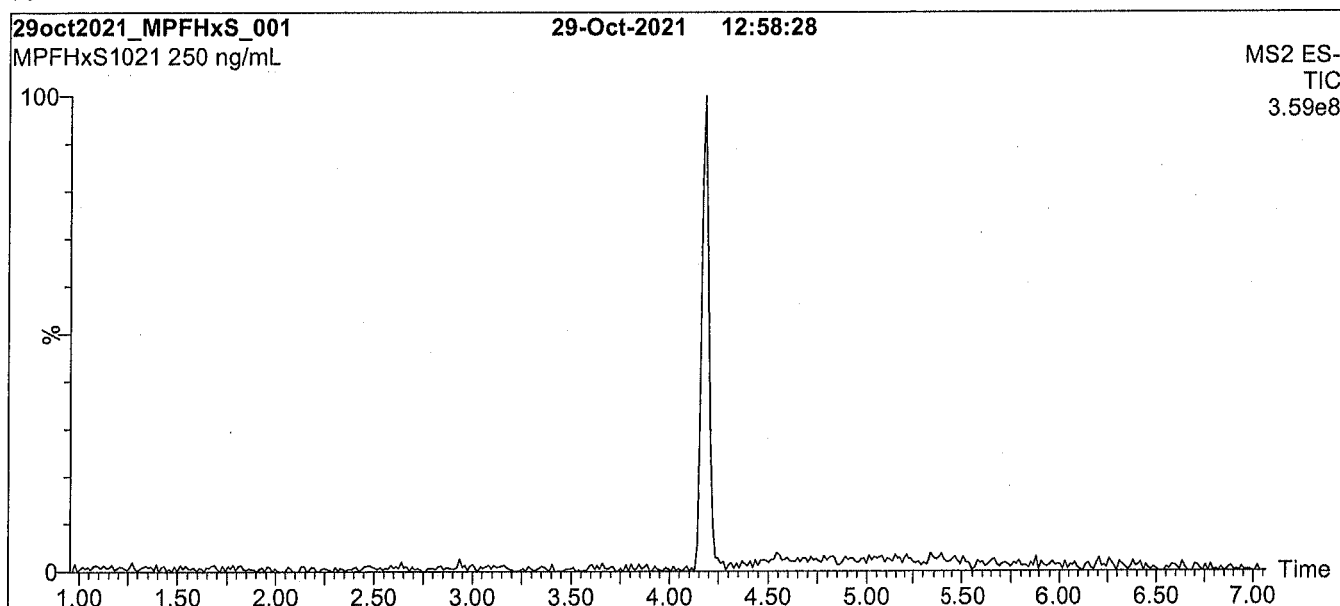
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Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield 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)

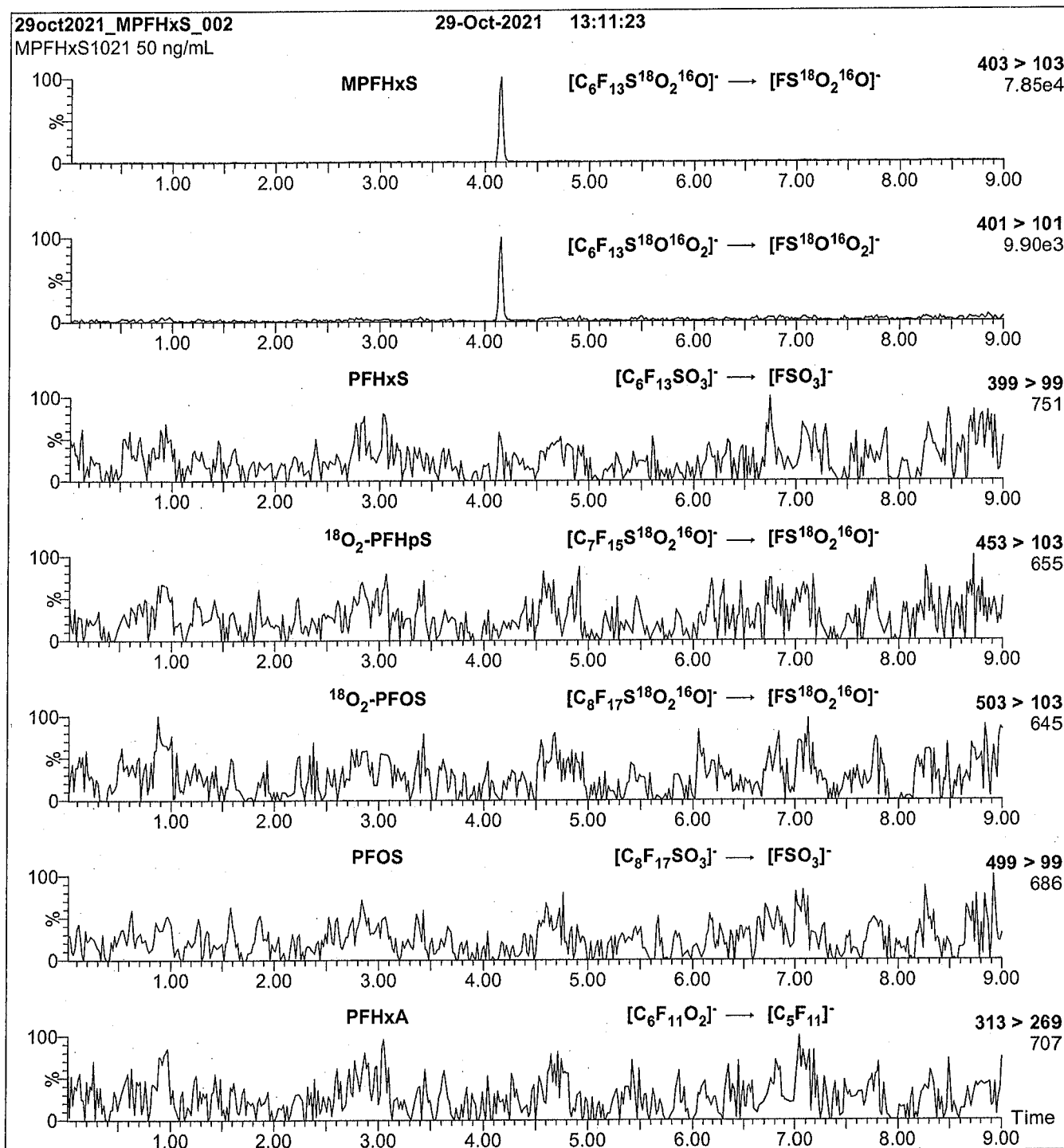
Source: Electrospray (negative)

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

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

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

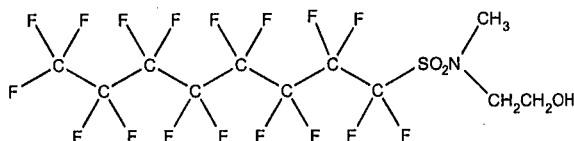


WELLINGTON LABORATORIES

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: 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:

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:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

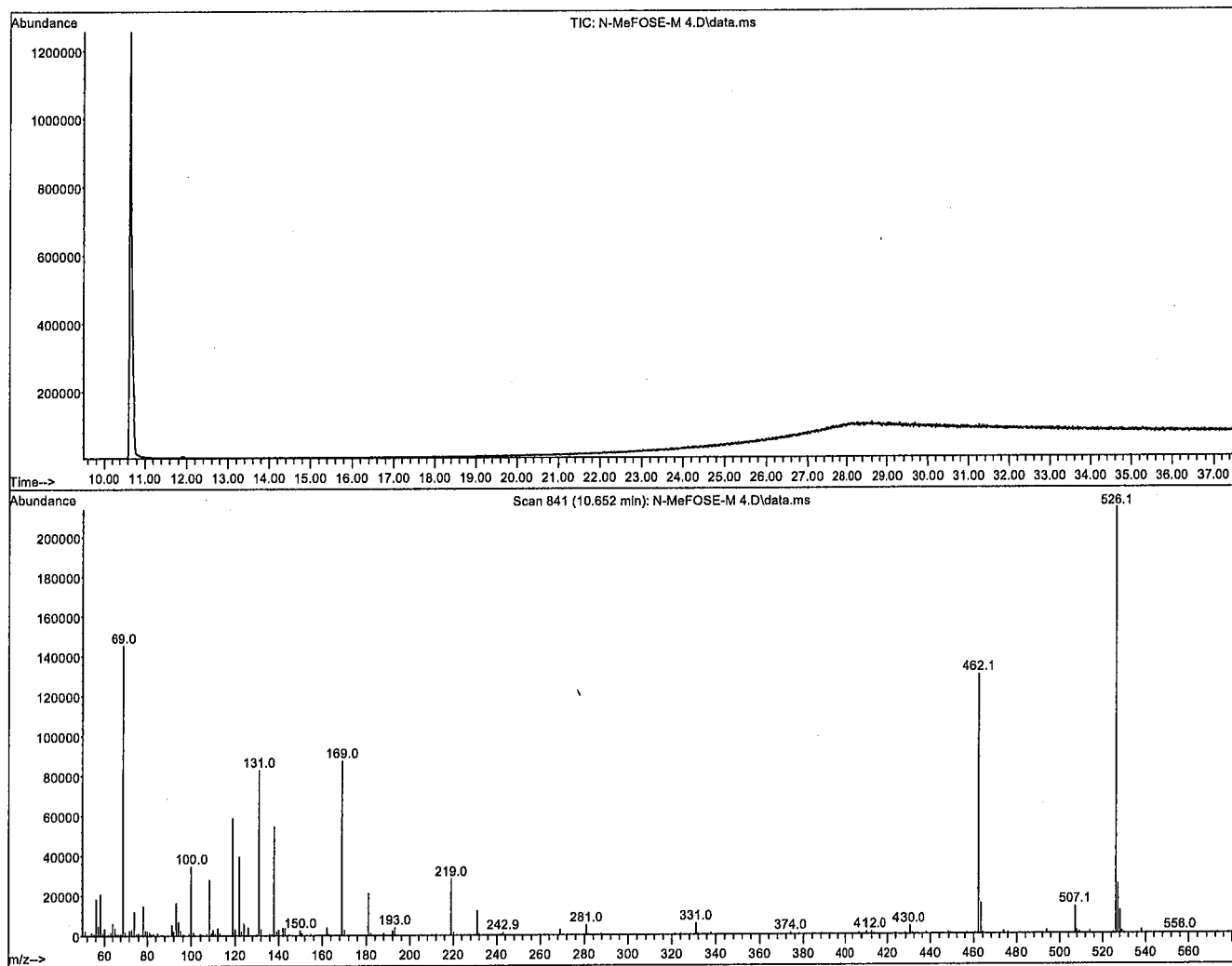
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

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

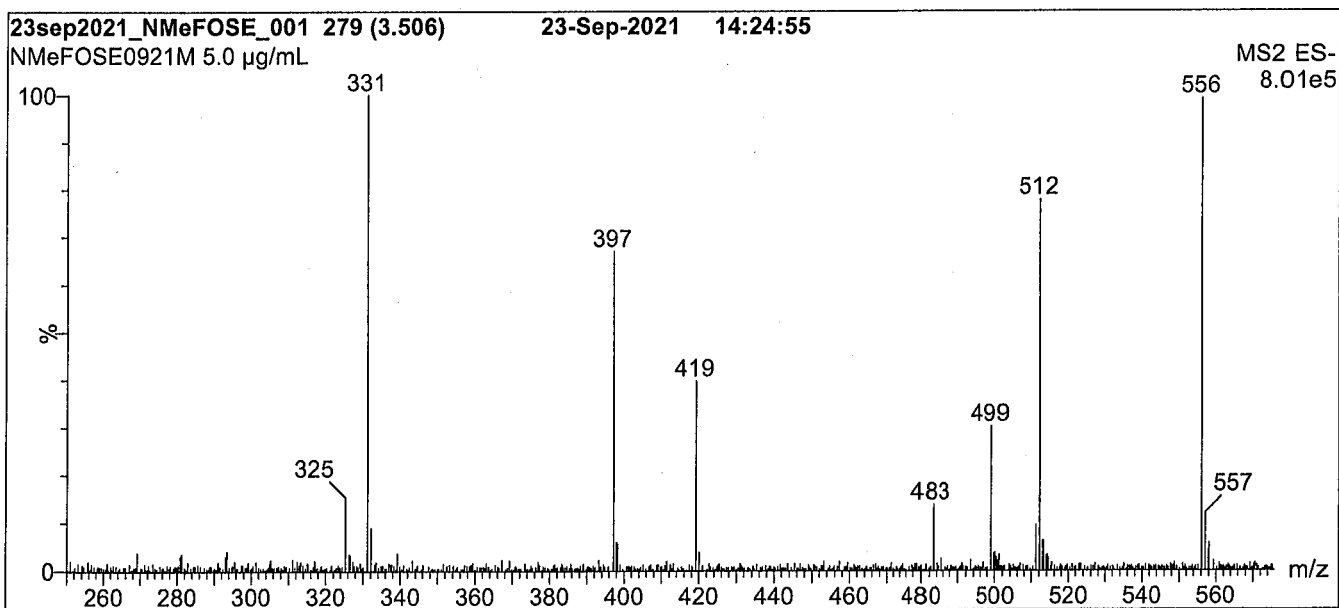
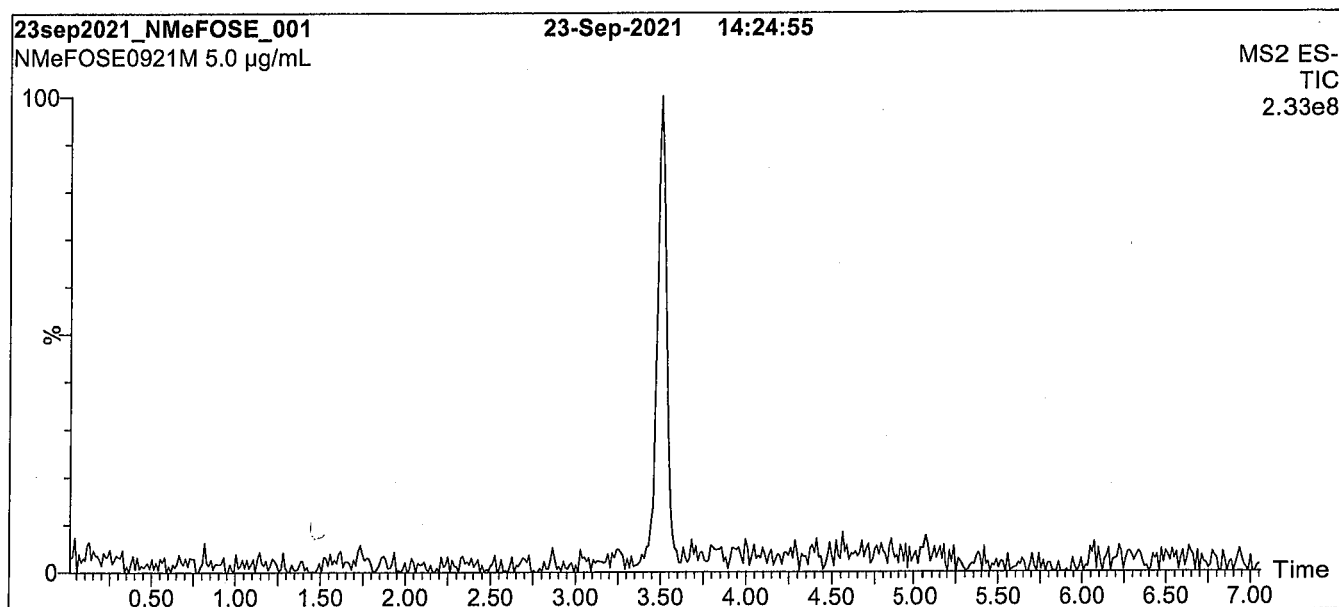
Flow: Constant at 1 mL/min

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)

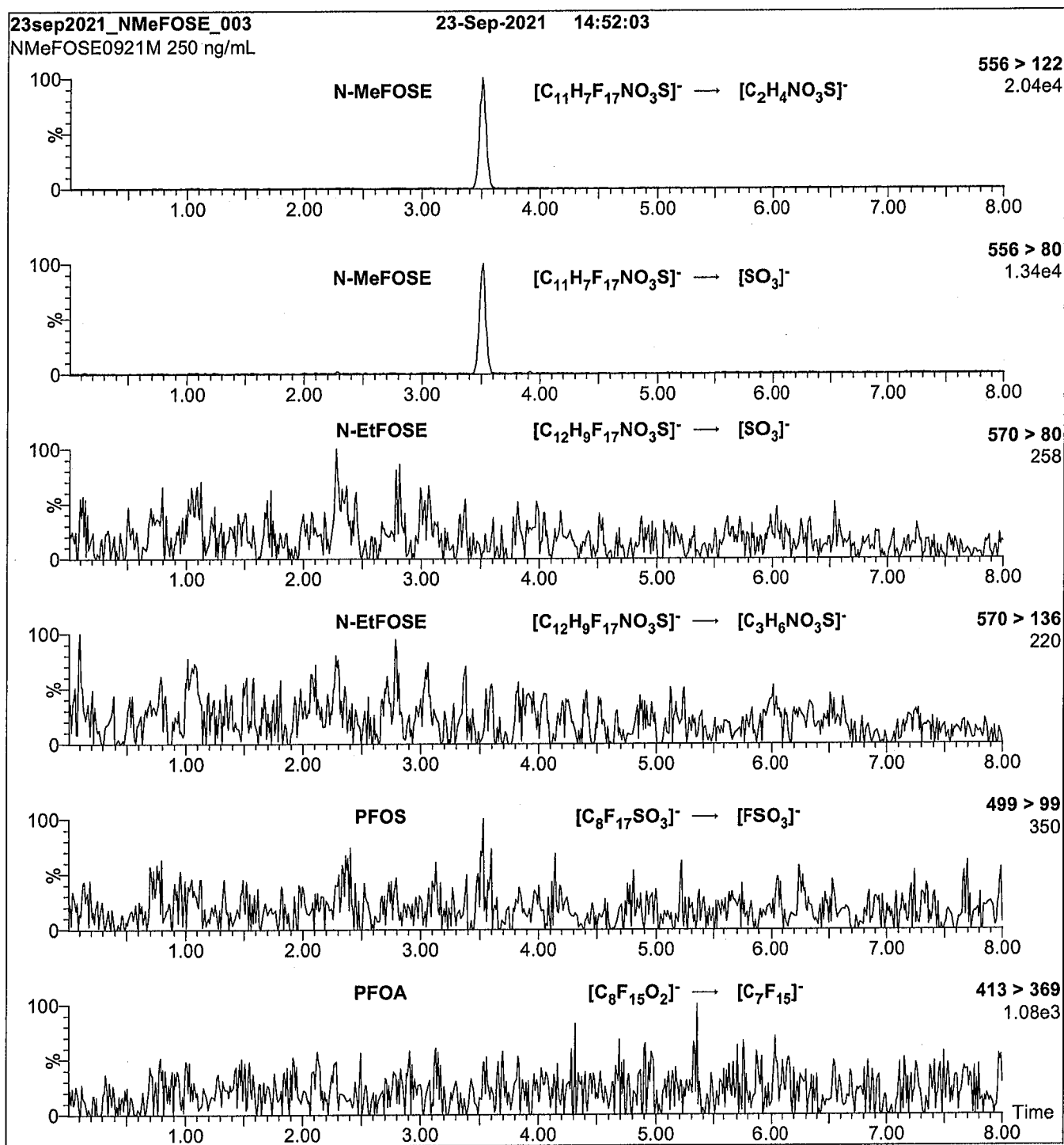
Source: Electrospray (negative)

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

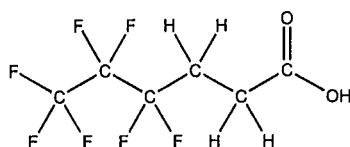
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE		24448-09-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA **LOT NUMBER:** FPrPA0122
COMPOUND: 3-Perfluoropropyl propanoic acid **22C0308**
STRUCTURE: **CAS #:** 356-02-5



MOLECULAR FORMULA: $C_6H_5F_7O_2$ **MOLECULAR WEIGHT:** 242.09
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

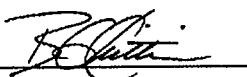
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 02/04/2022
(mm/dd/yyyy)
 B.G. Chittim, General Manager

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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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.

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

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

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

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

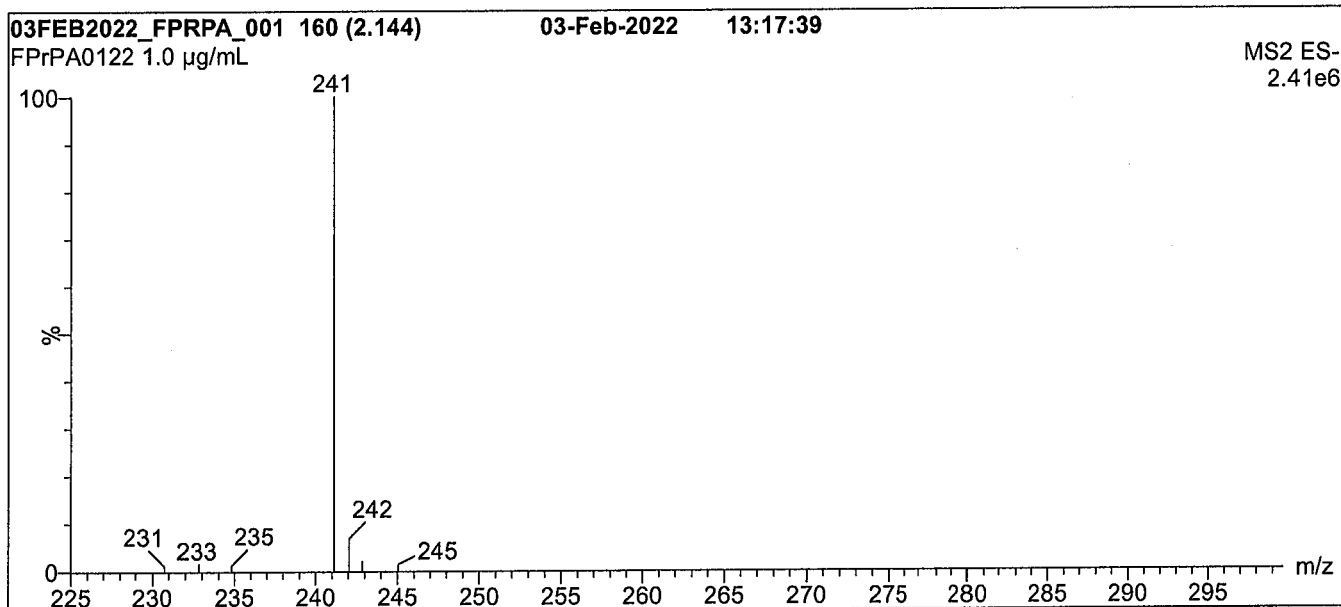
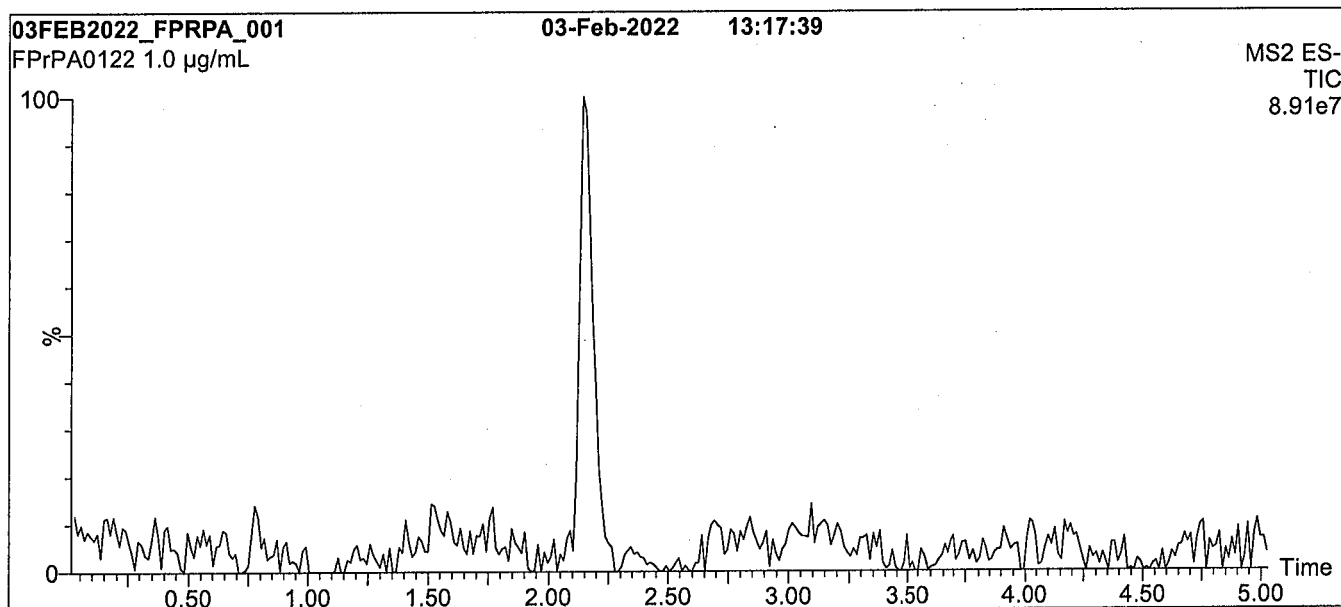
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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)

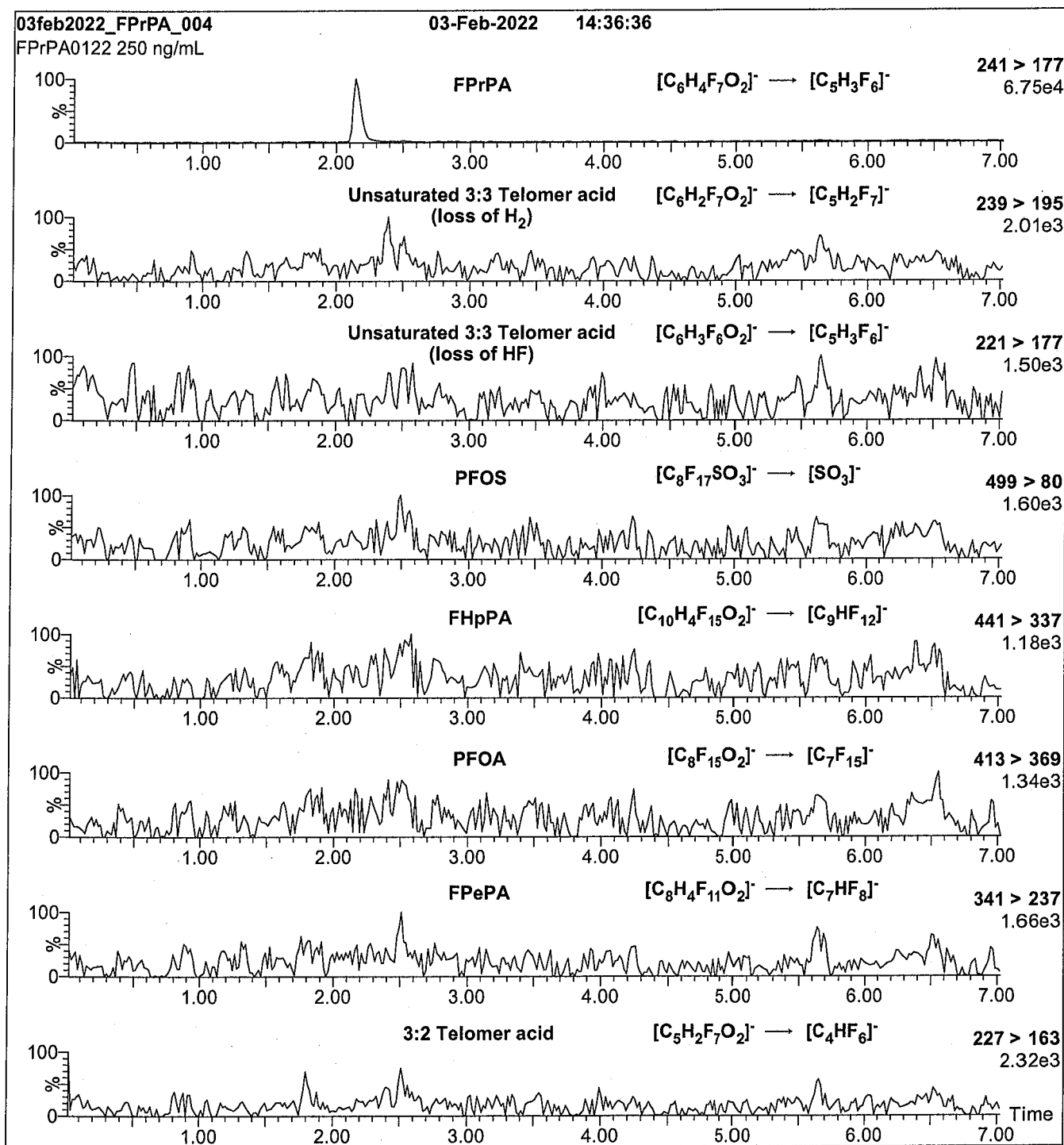
Source: Electrospray (negative)

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

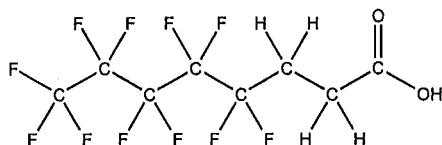


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA **LOT NUMBER:** FPePA1221
COMPOUND: 3-Perfluoropentyl propanoic acid **22C0309**

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



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$ **MOLECULAR WEIGHT:** 342.11
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/05/2022
EXPIRY DATE: (mm/dd/yyyy) 01/05/2027
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^1H NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 01/06/2022
 (mm/dd/yyyy)

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

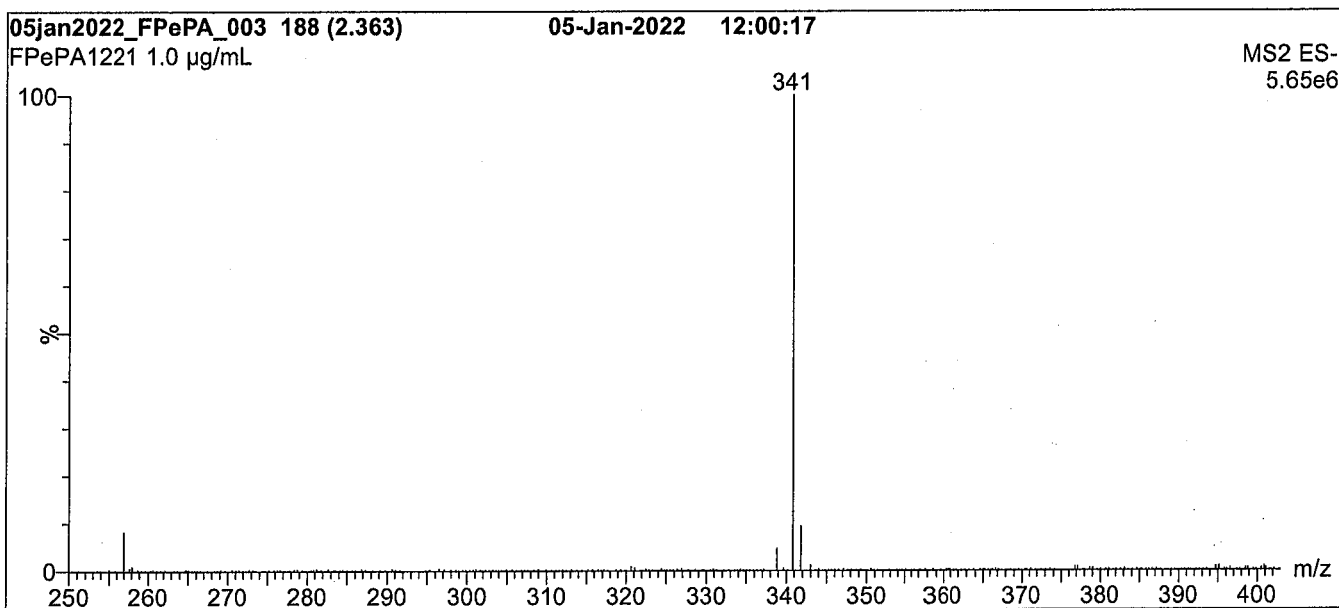
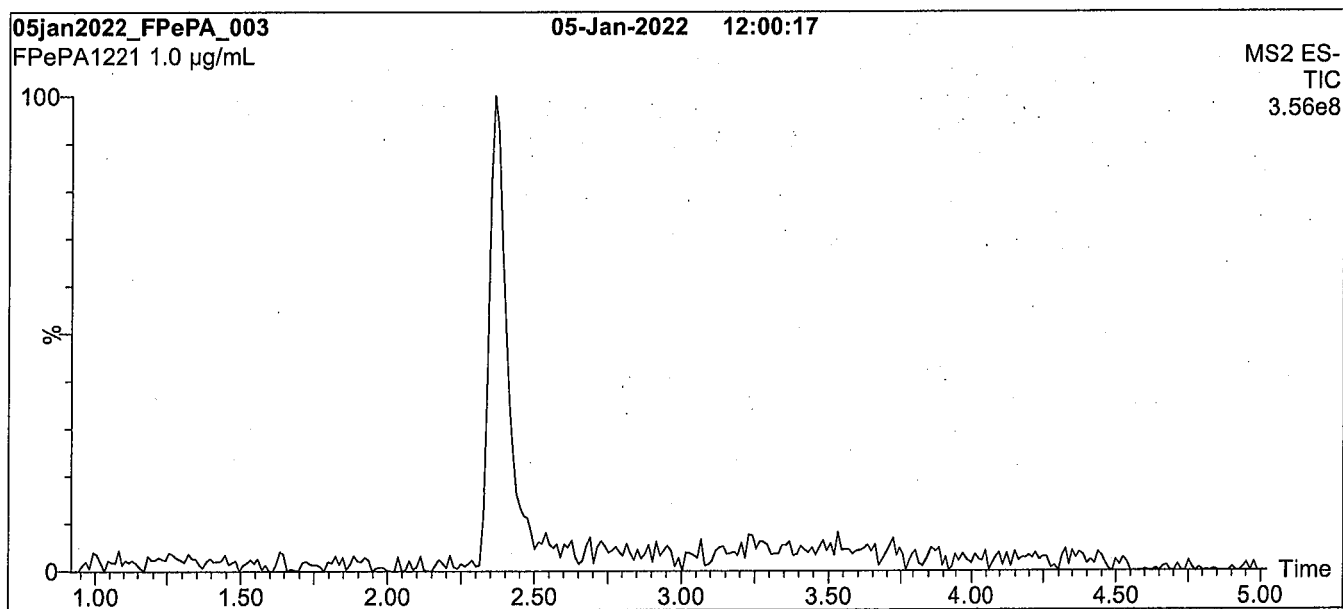
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Figure 1: FPePA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

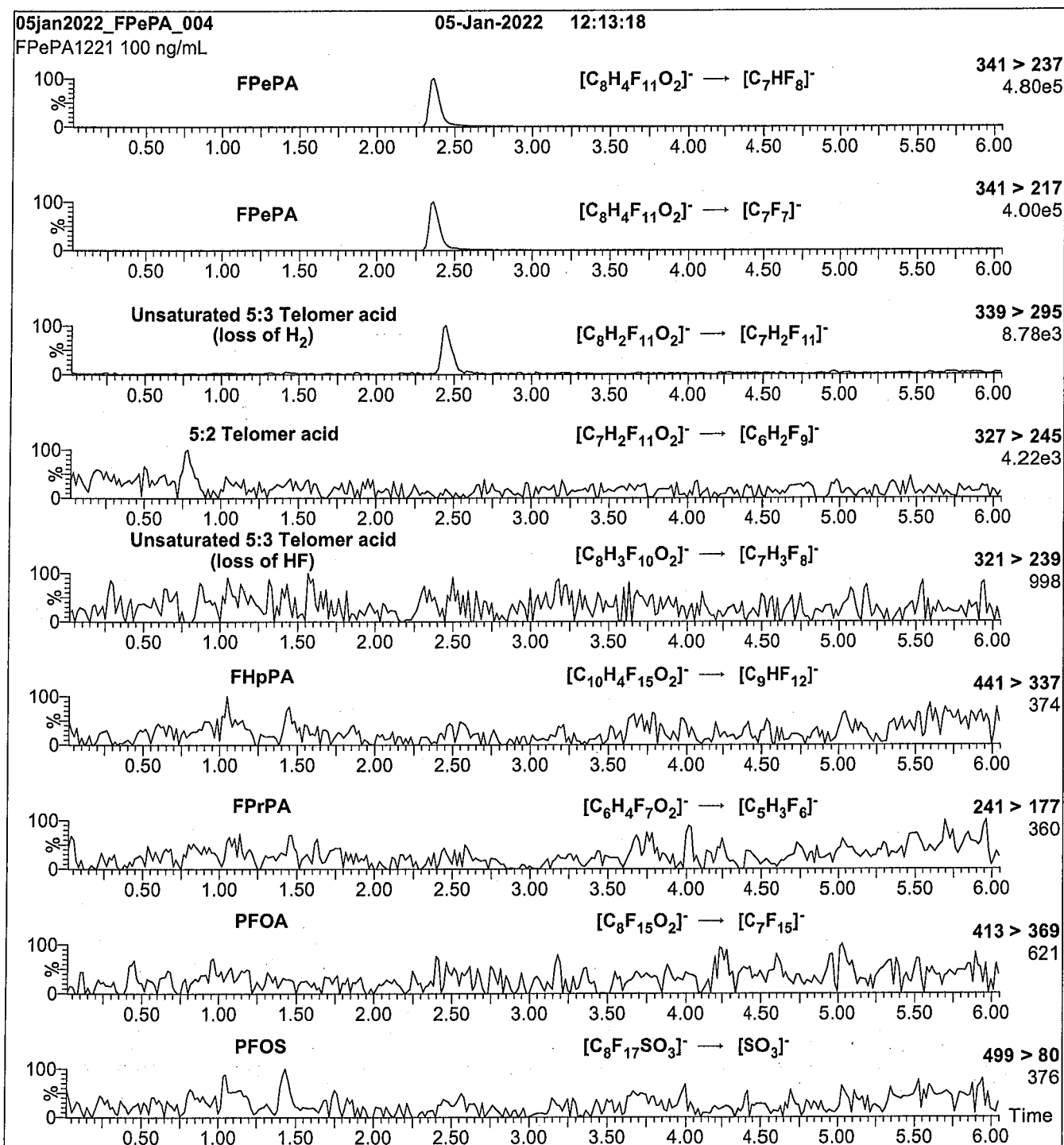
Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 3 min before returning to initial conditions in 0.75 min.
 Time: 12 min

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

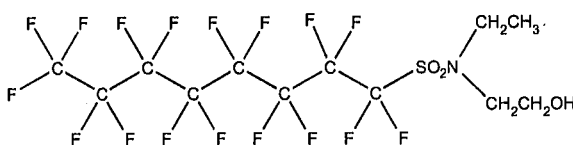
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



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:

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:

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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:

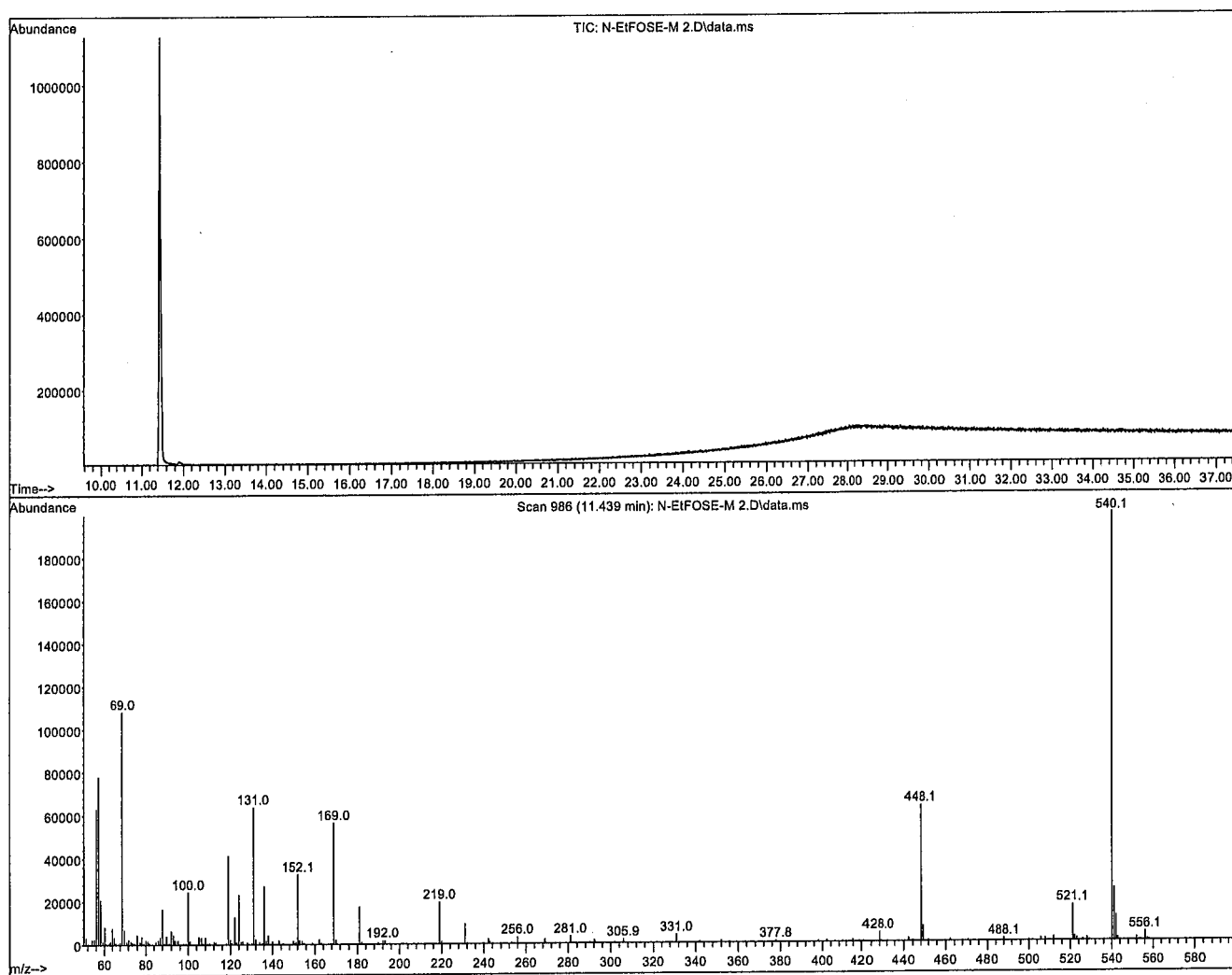
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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-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

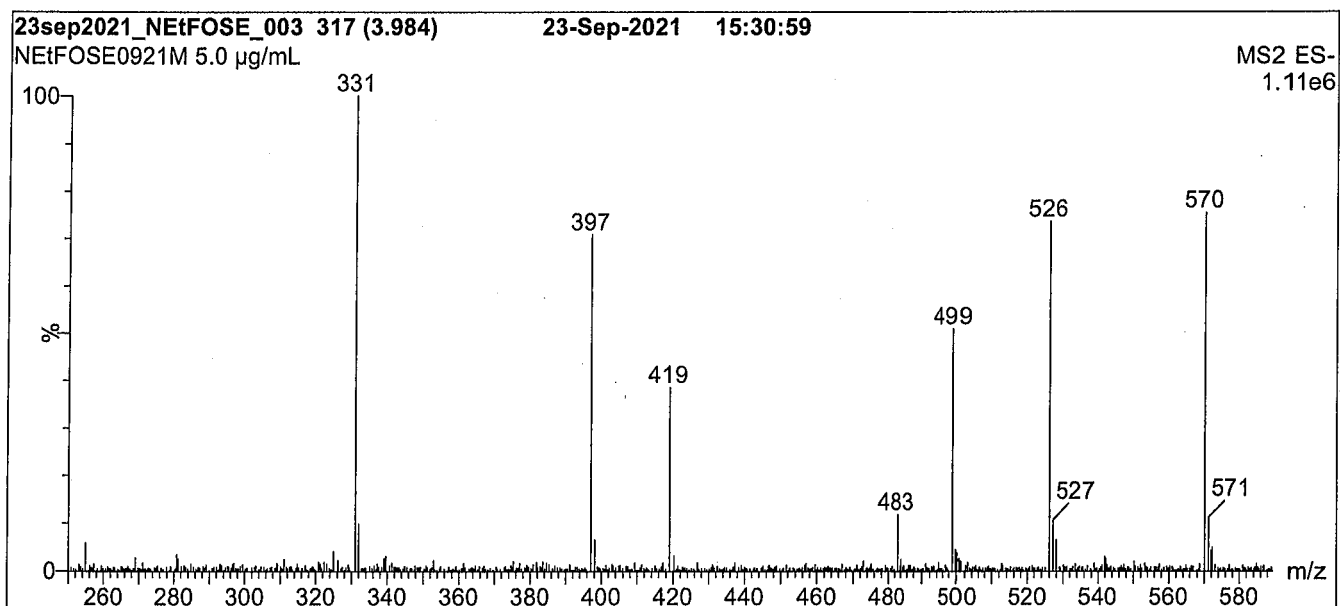
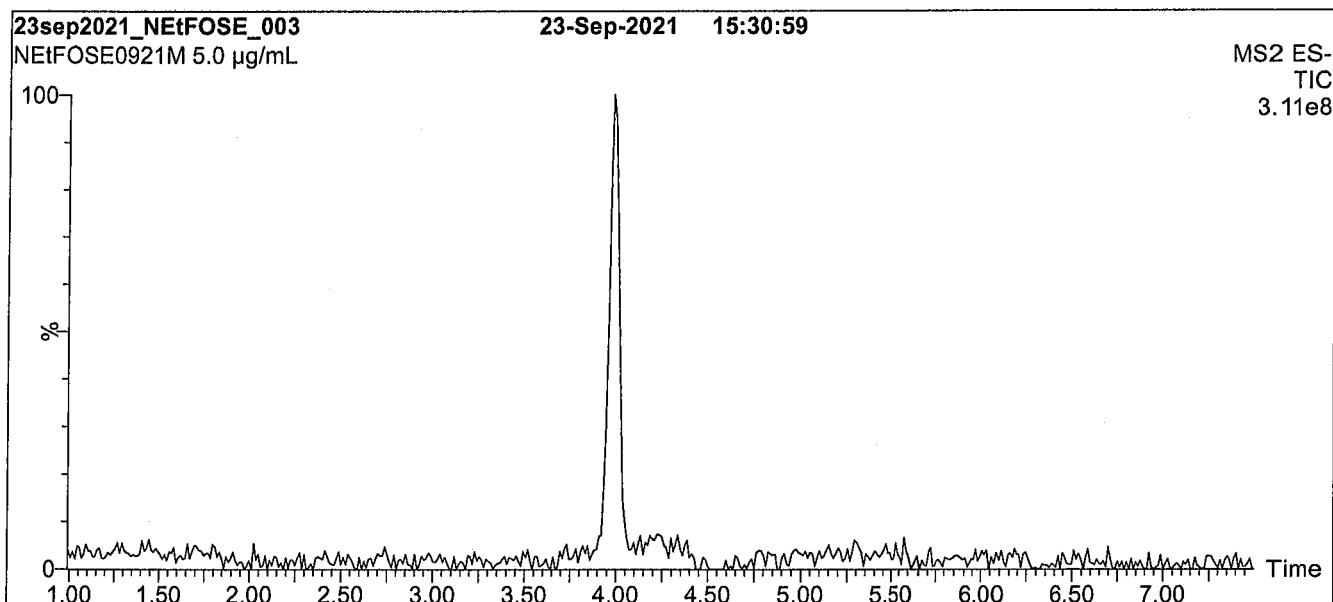
Flow: Constant at 1 mL/min

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

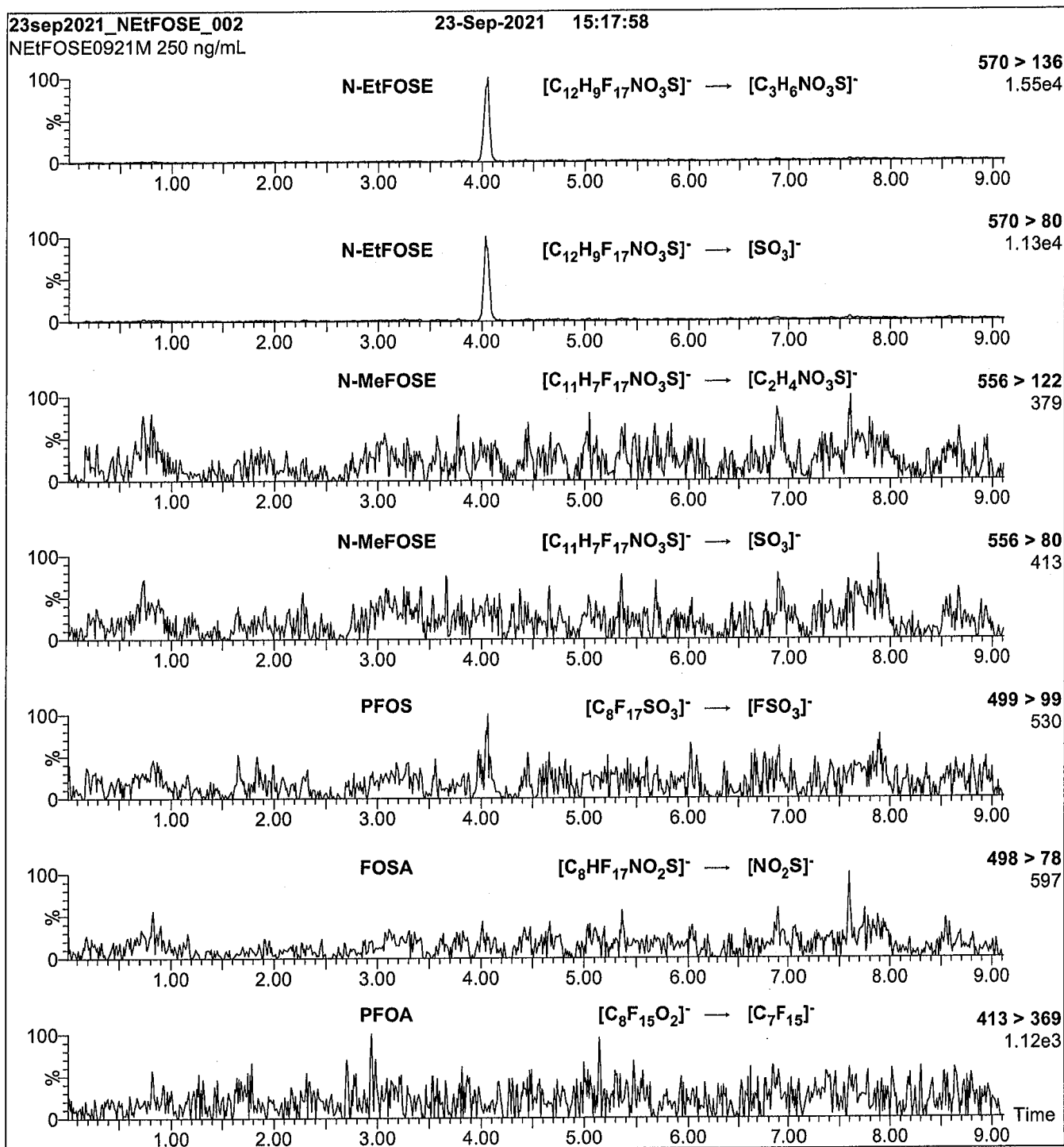
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

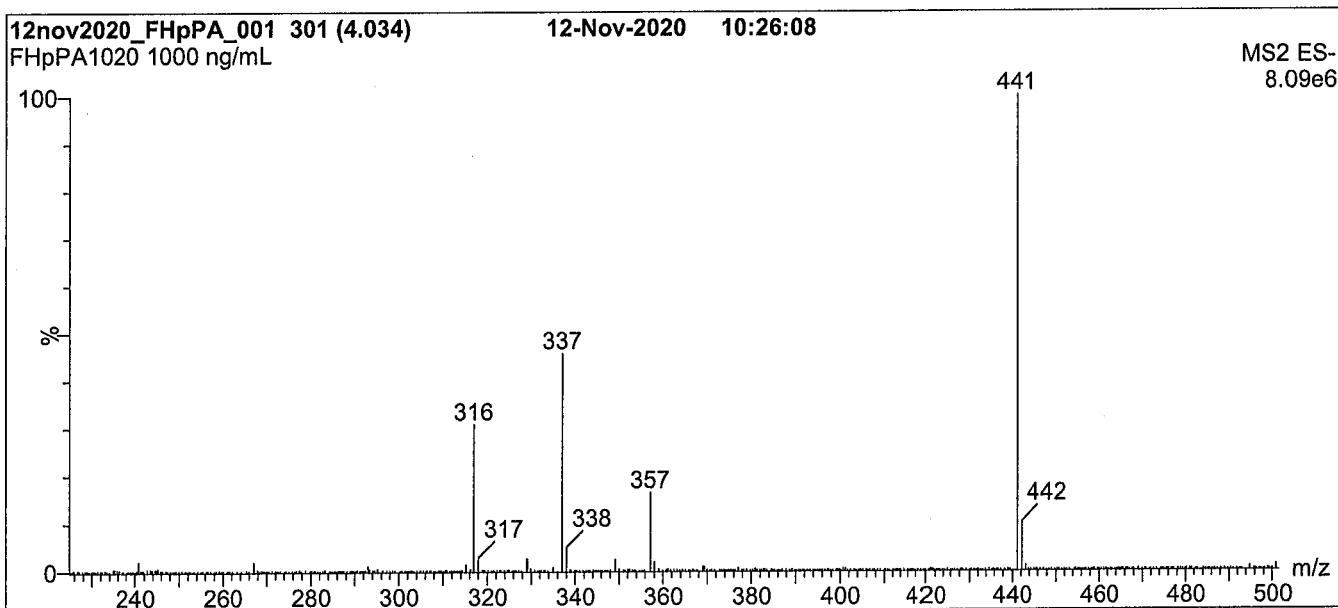
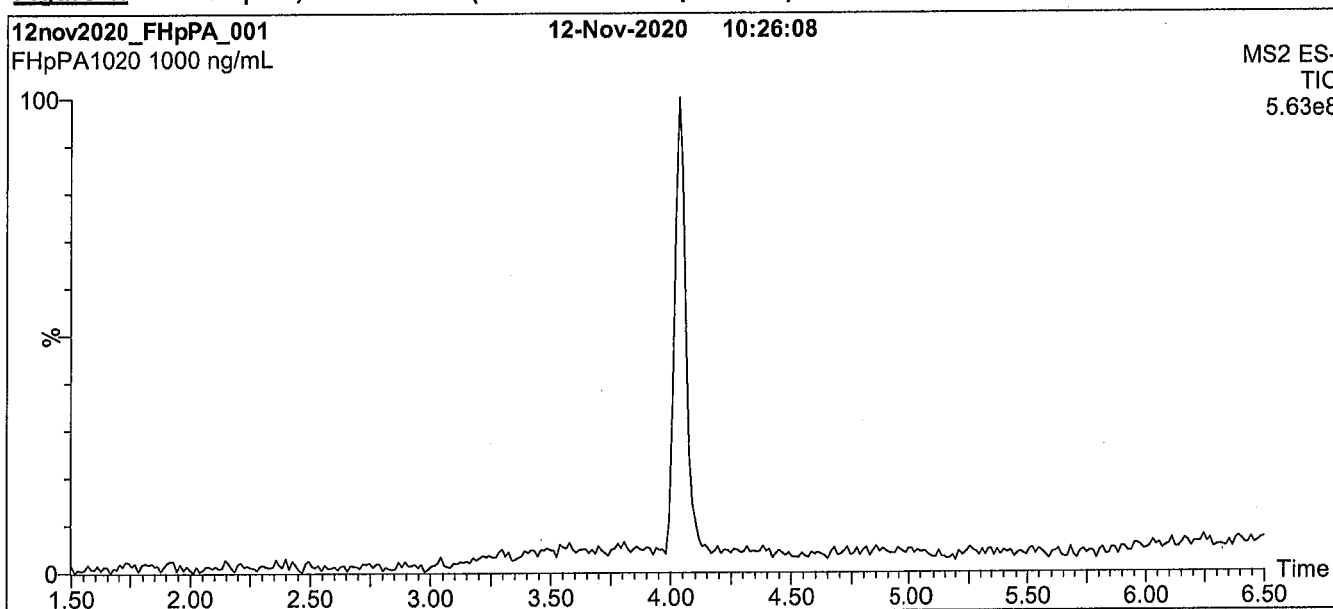
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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)

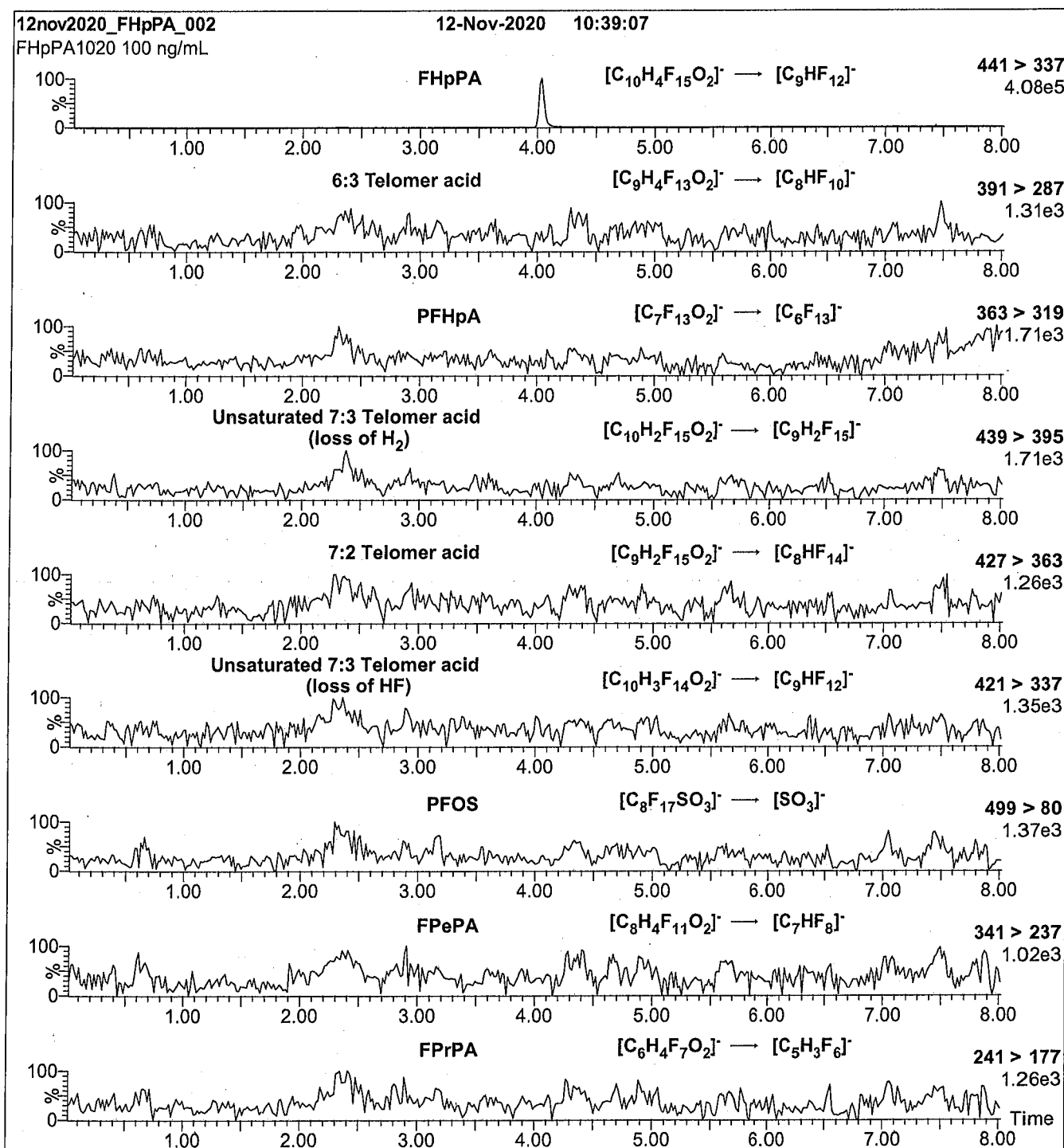
Source: Electrospray (negative)

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#: 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

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

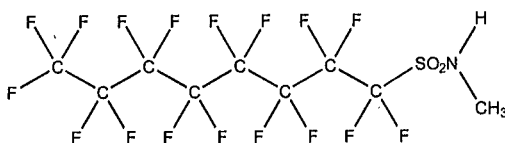
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M **LOT NUMBER:** NMeFOSA0721M
COMPOUND: N-methylperfluoro-1-octanesulfonamide **22C0312**
STRUCTURE: **CAS #:** 31506-32-8



MOLECULAR FORMULA: $C_9H_4F_{17}NO_2S$ **MOLECULAR WEIGHT:** 513.17
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 08/04/2021
 (mm/dd/yyyy)

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

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:

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

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

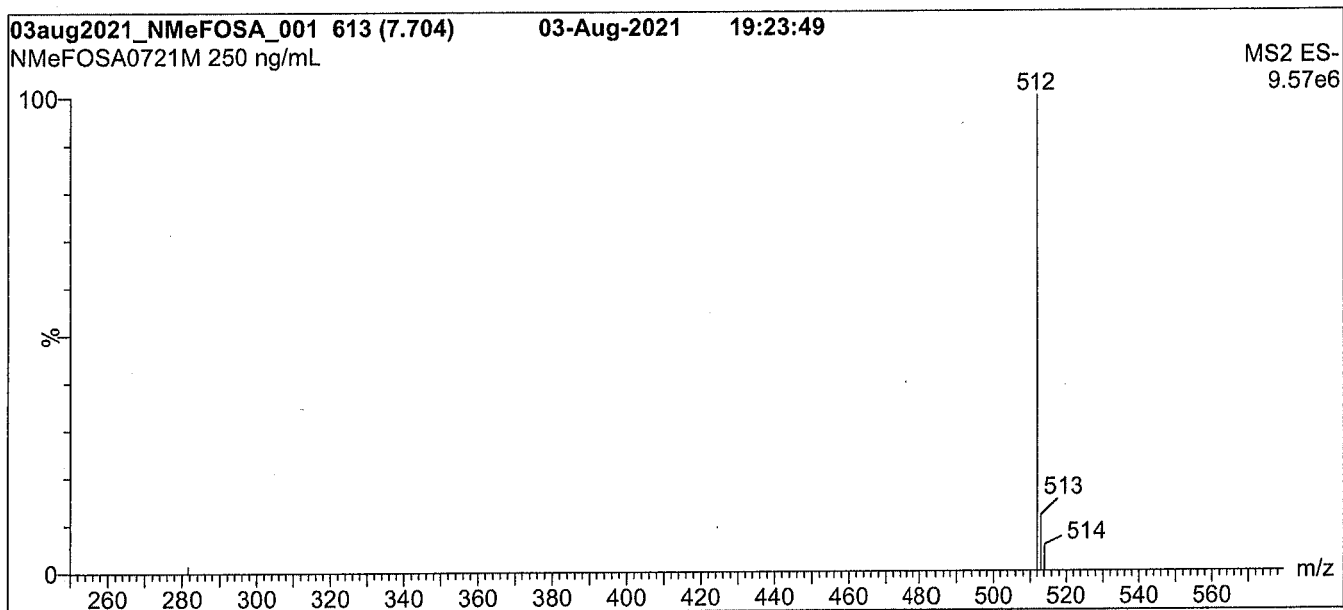
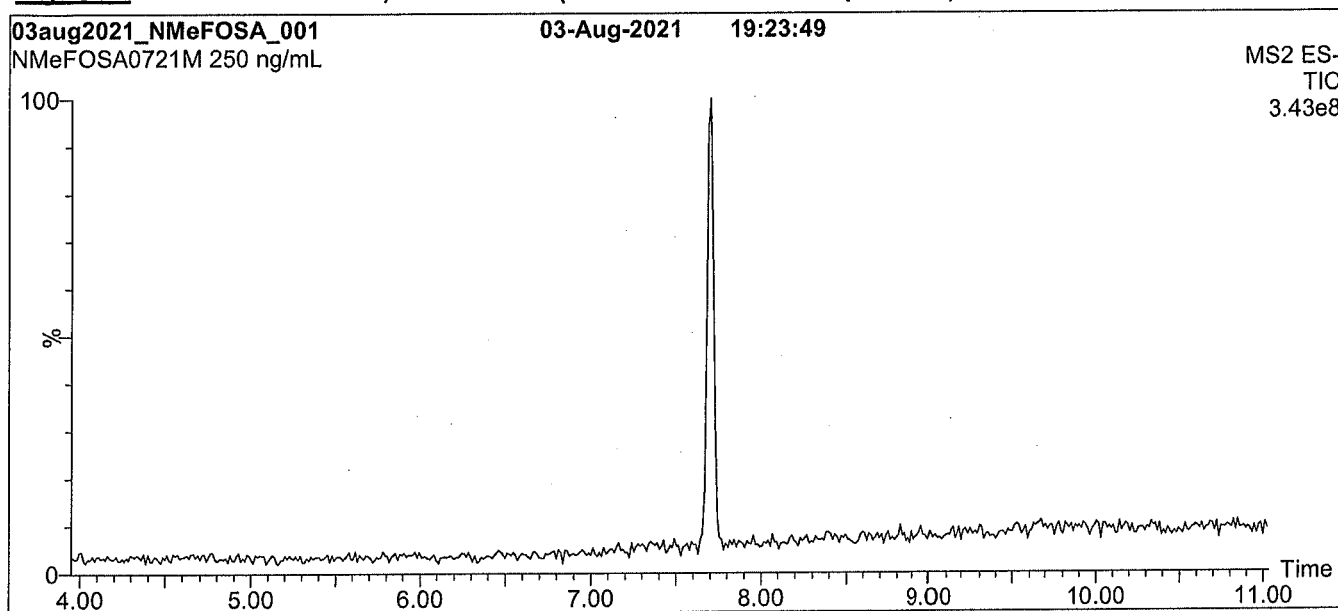
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QUALITY MANAGEMENT:

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Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

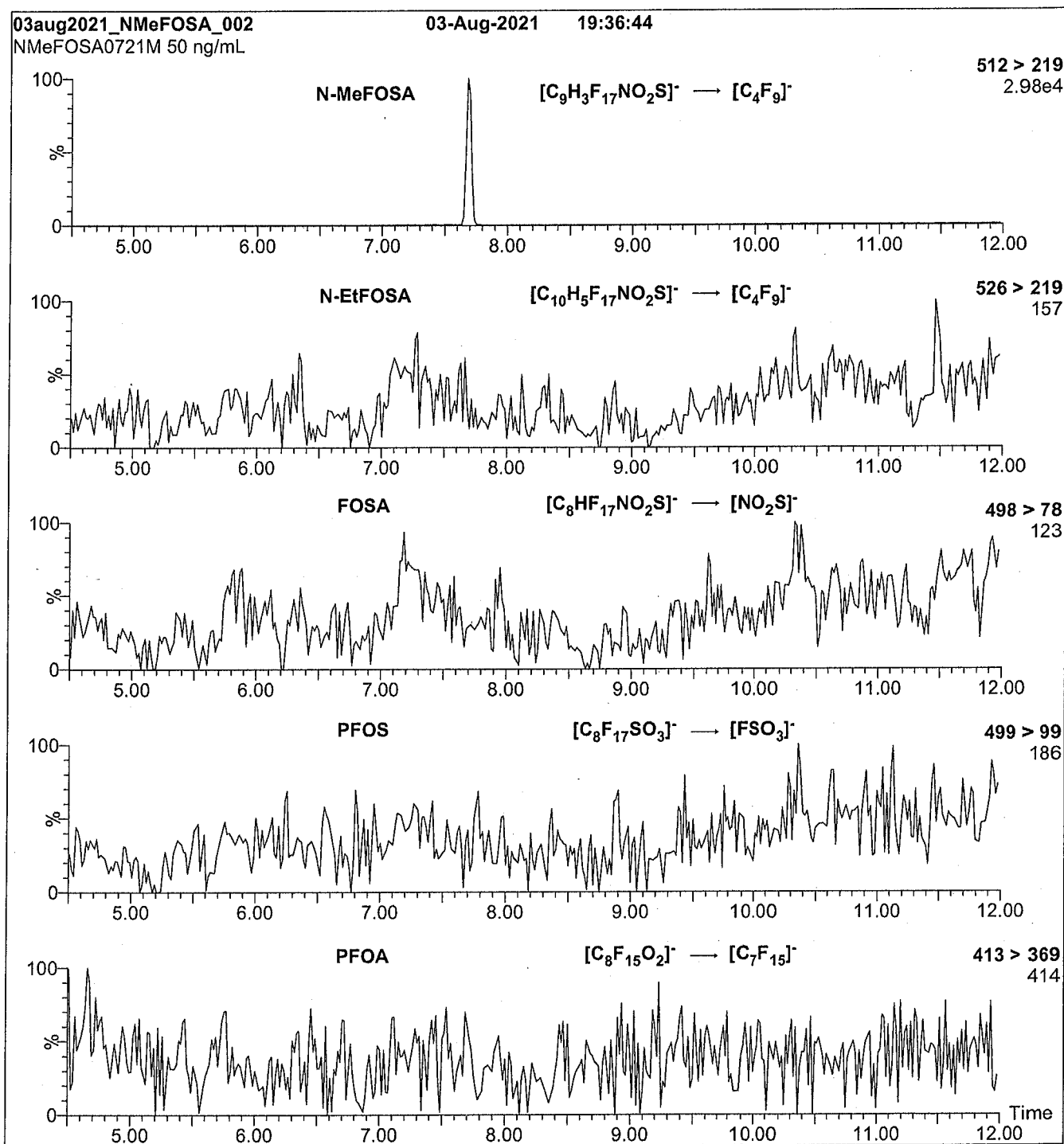
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

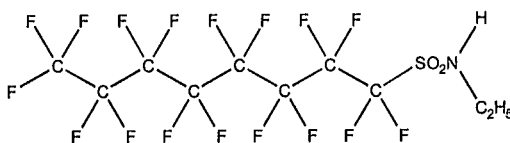
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



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.

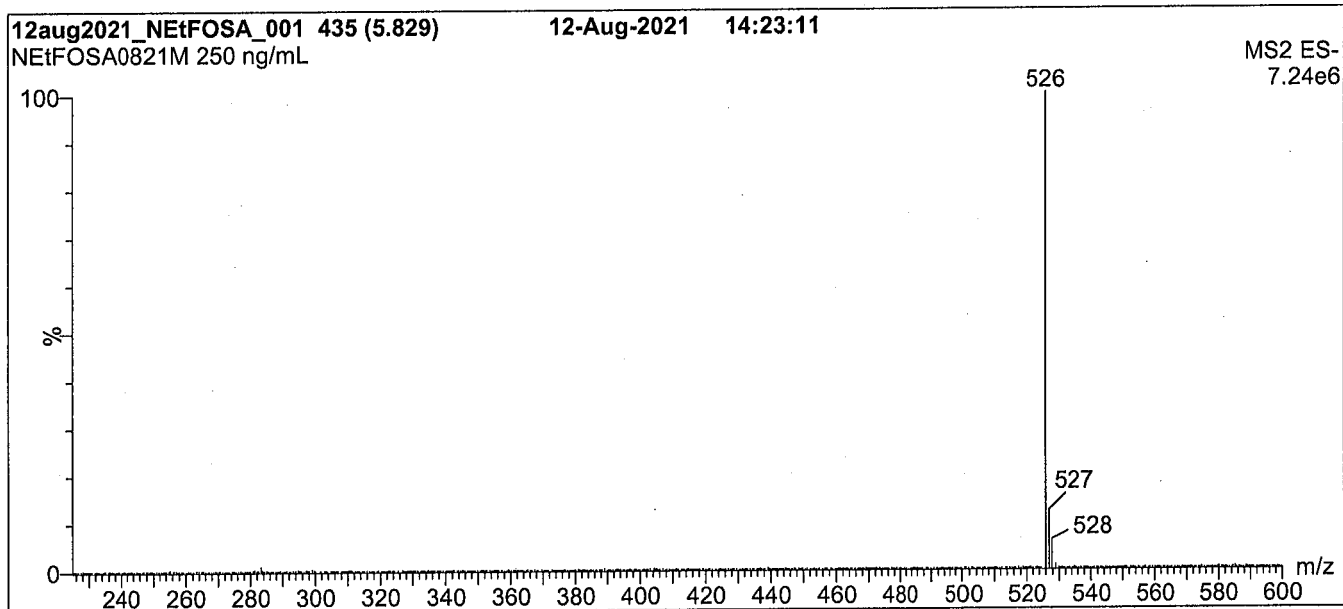
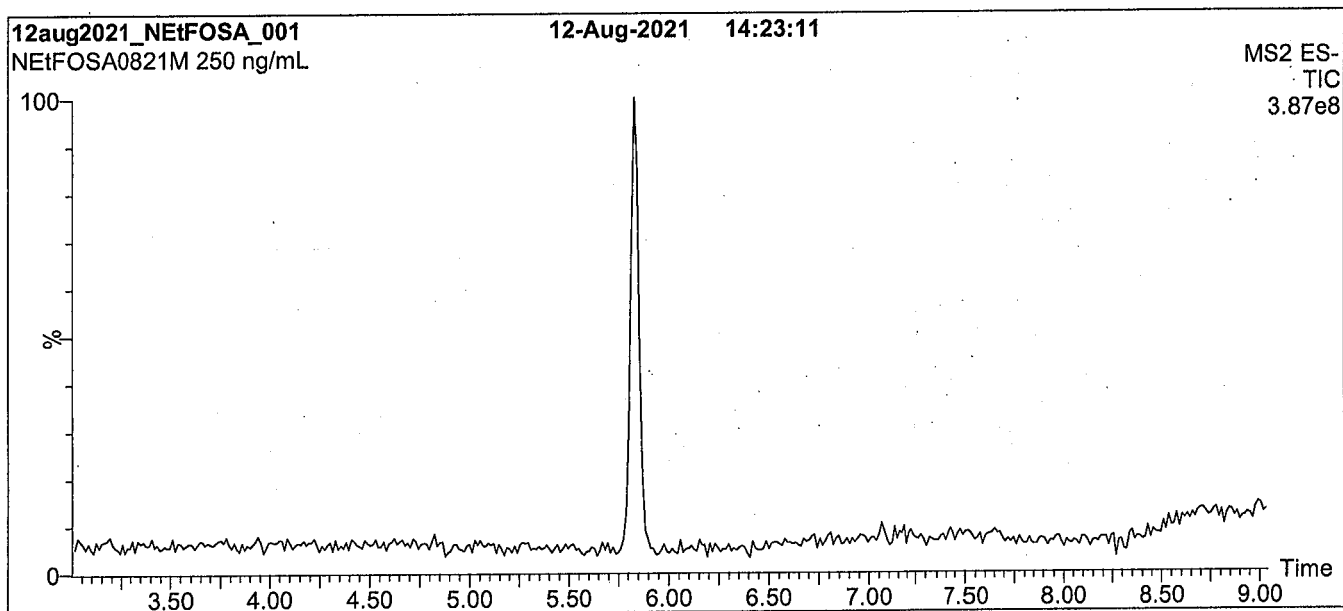
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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.

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

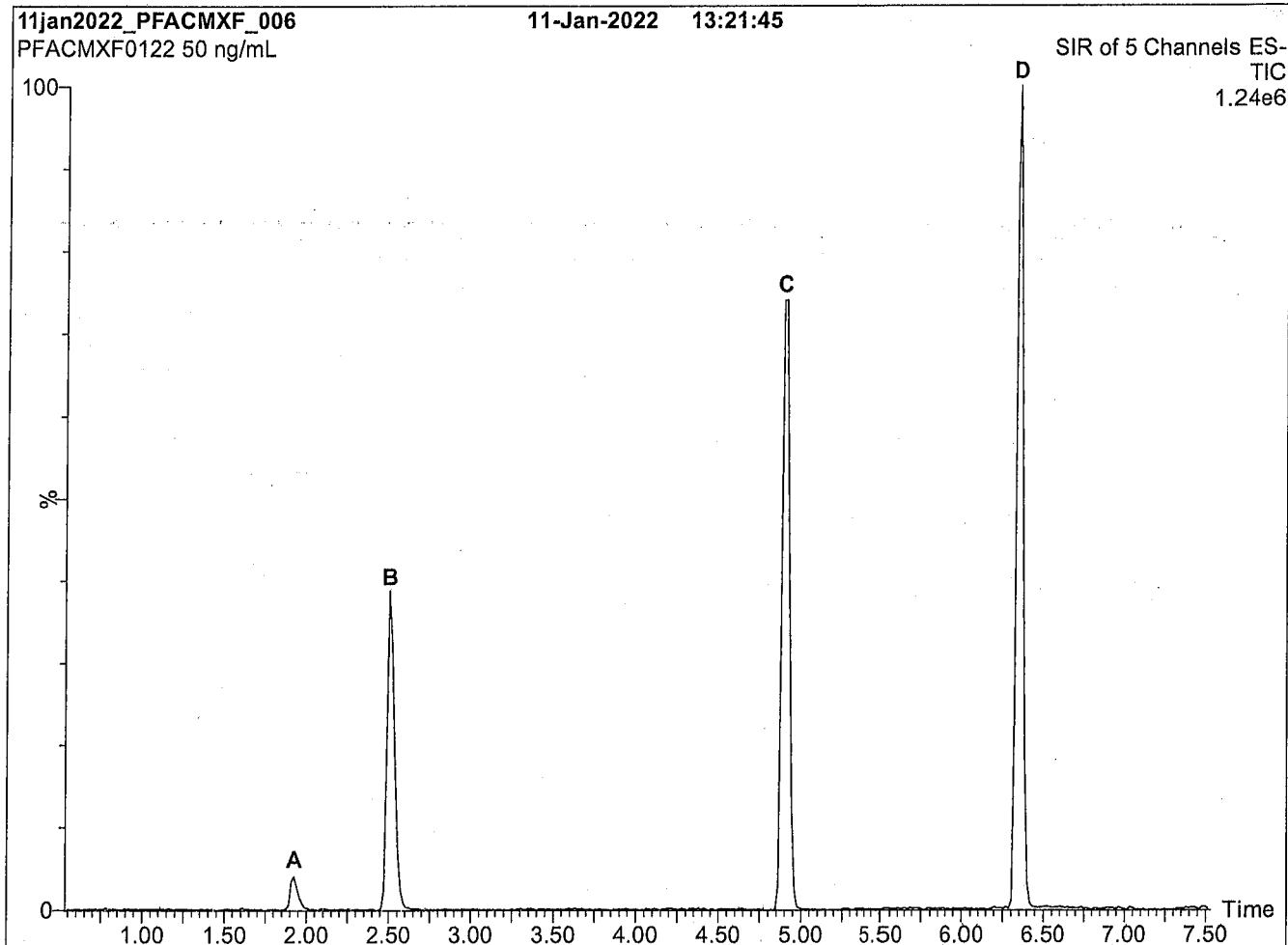
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	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

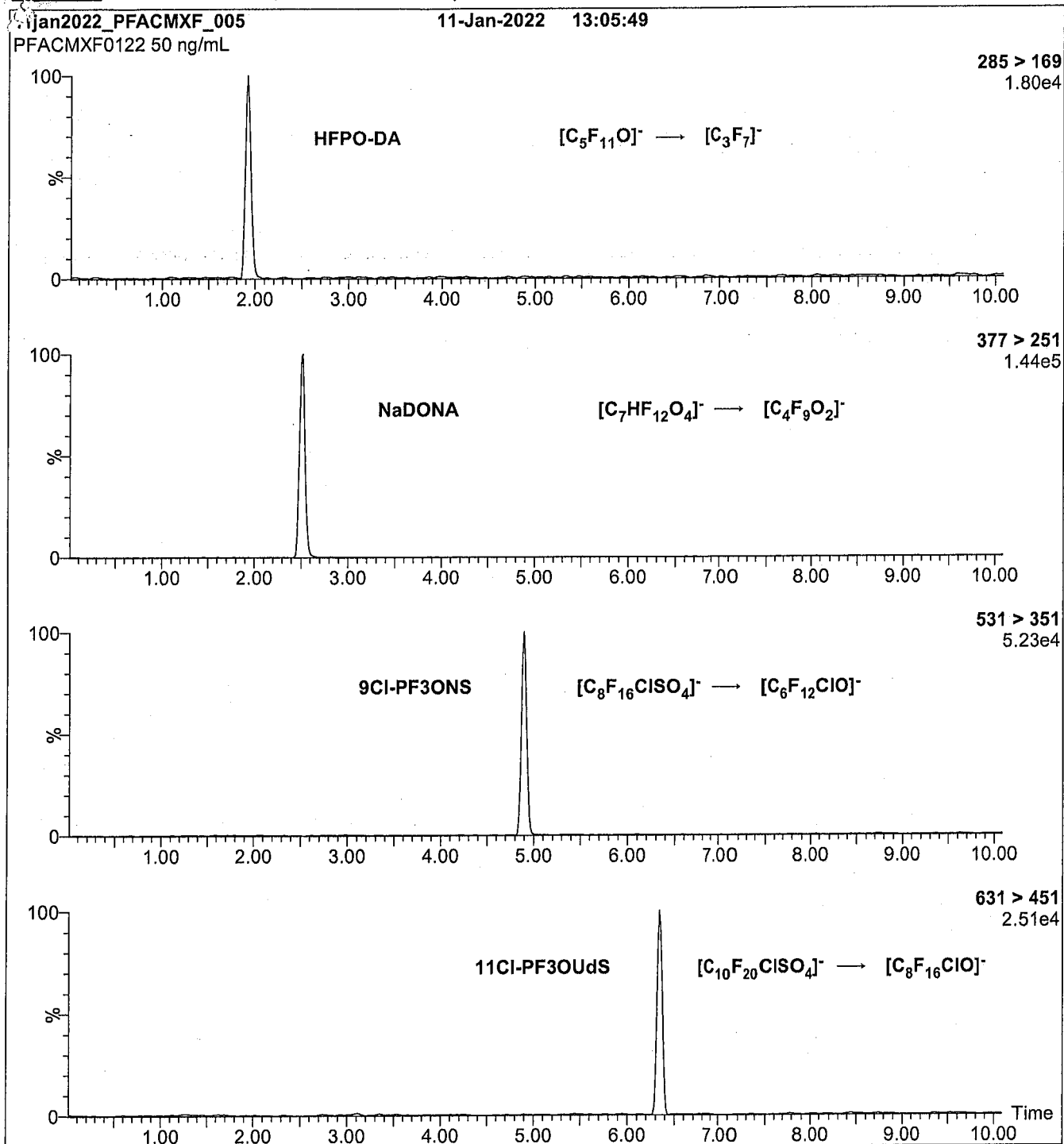
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

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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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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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	PFTrDA	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 perfluorohexadisulfonate ^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 perfluorooctadisulfonate ^d	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: Σ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decadisulfonate	L-PFDs	1.00	0.965	24
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2Fts	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2Fts	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2Fts	4.00	3.84	16

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

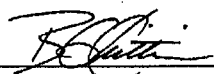
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^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	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	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	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\ \\ \text{CF}_3 \end{array}$ $\quad \quad \quad $ $\quad \quad \quad \text{C}_2\text{H}_5$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{CFCF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\ \\ \text{CF}_3 \end{array}$ $\quad \quad \quad $ $\quad \quad \quad \text{C}_2\text{H}_5$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{CFCF}_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\ \\ \text{CF}_3 \end{array}$ $\quad \quad \quad $ $\quad \quad \quad \text{C}_2\text{H}_5$	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.

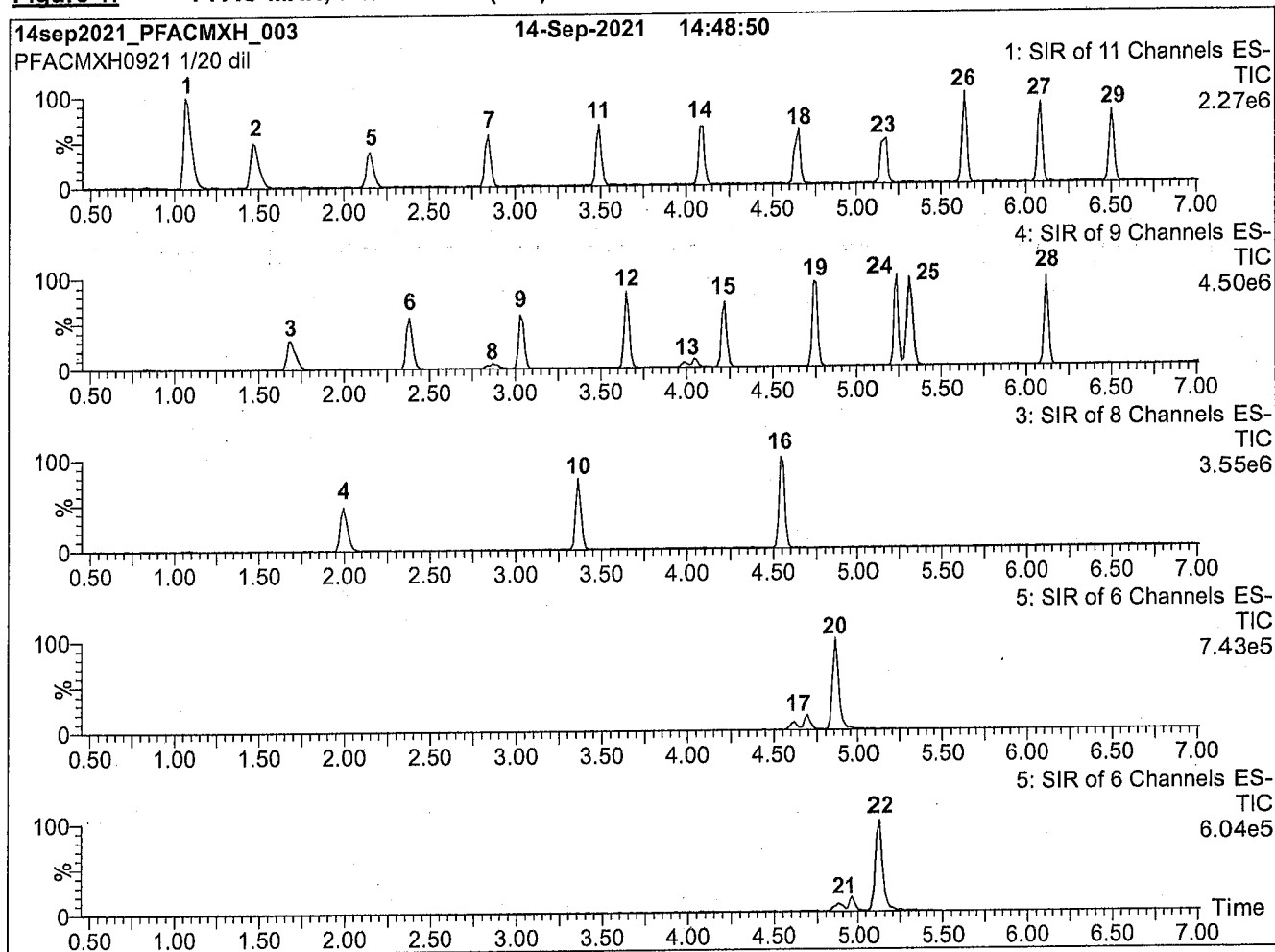
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

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	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{SO}_3^-\text{K}^+)\text{CF}_3$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{SO}_3^-\text{K}^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$\text{CF}_3\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$\text{CF}_3\text{C}(\text{CF}_3)_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$\text{CF}_3\text{CF}_2\text{C}(\text{CF}_3)_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$\text{CF}_3\text{CF}(\text{CF}_3)\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$\text{CF}_3\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	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

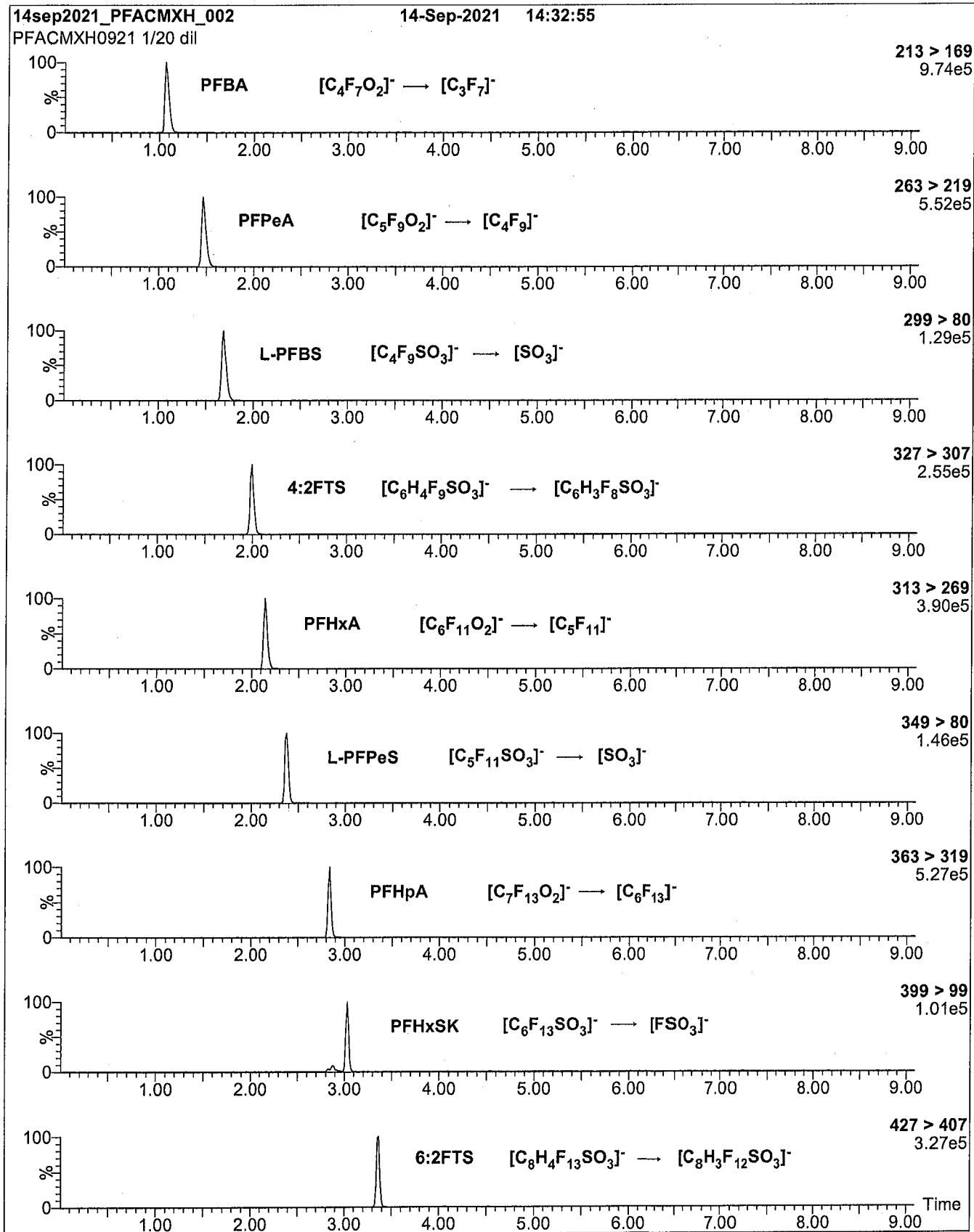
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

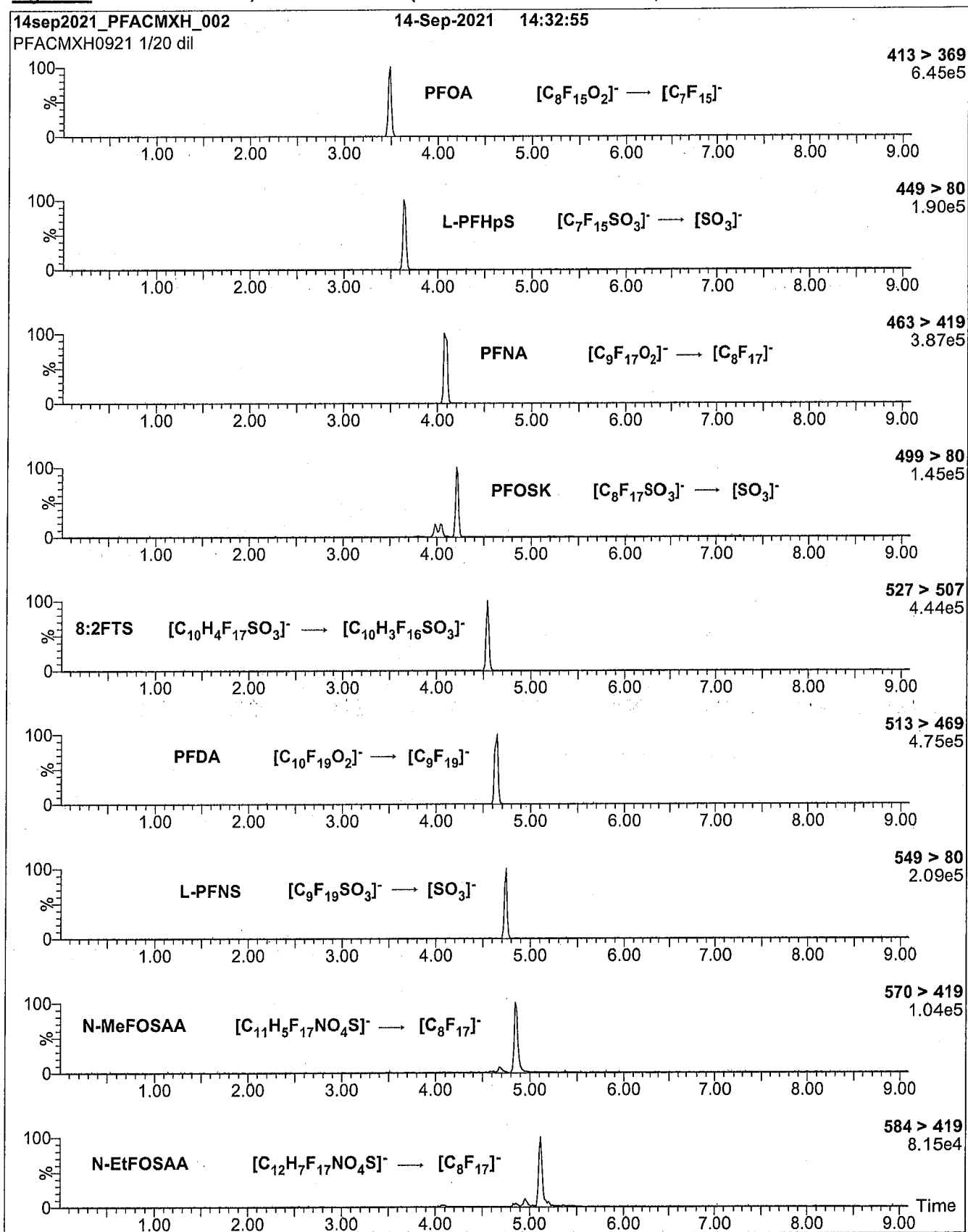
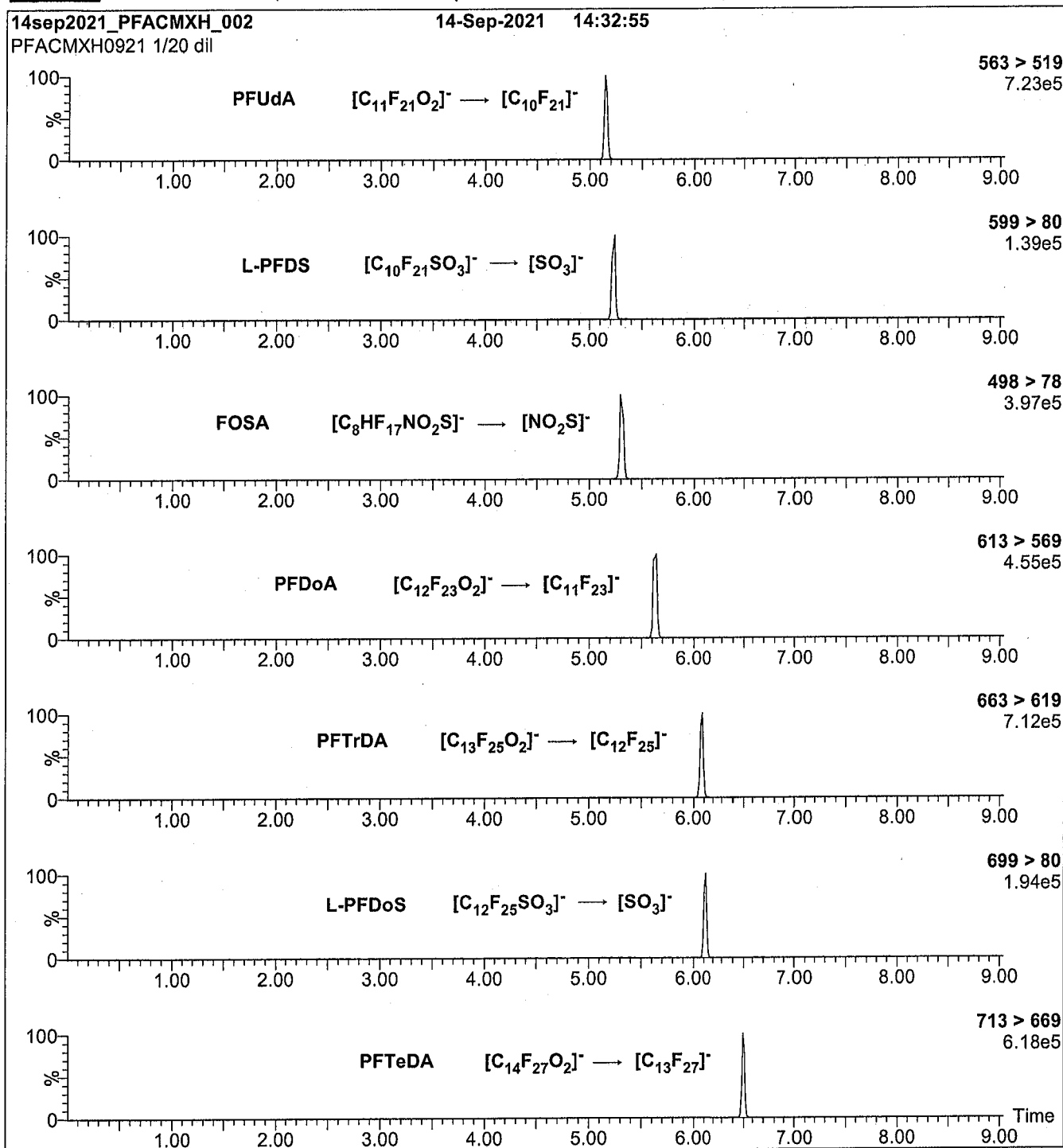
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

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.

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



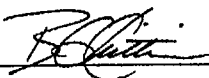
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

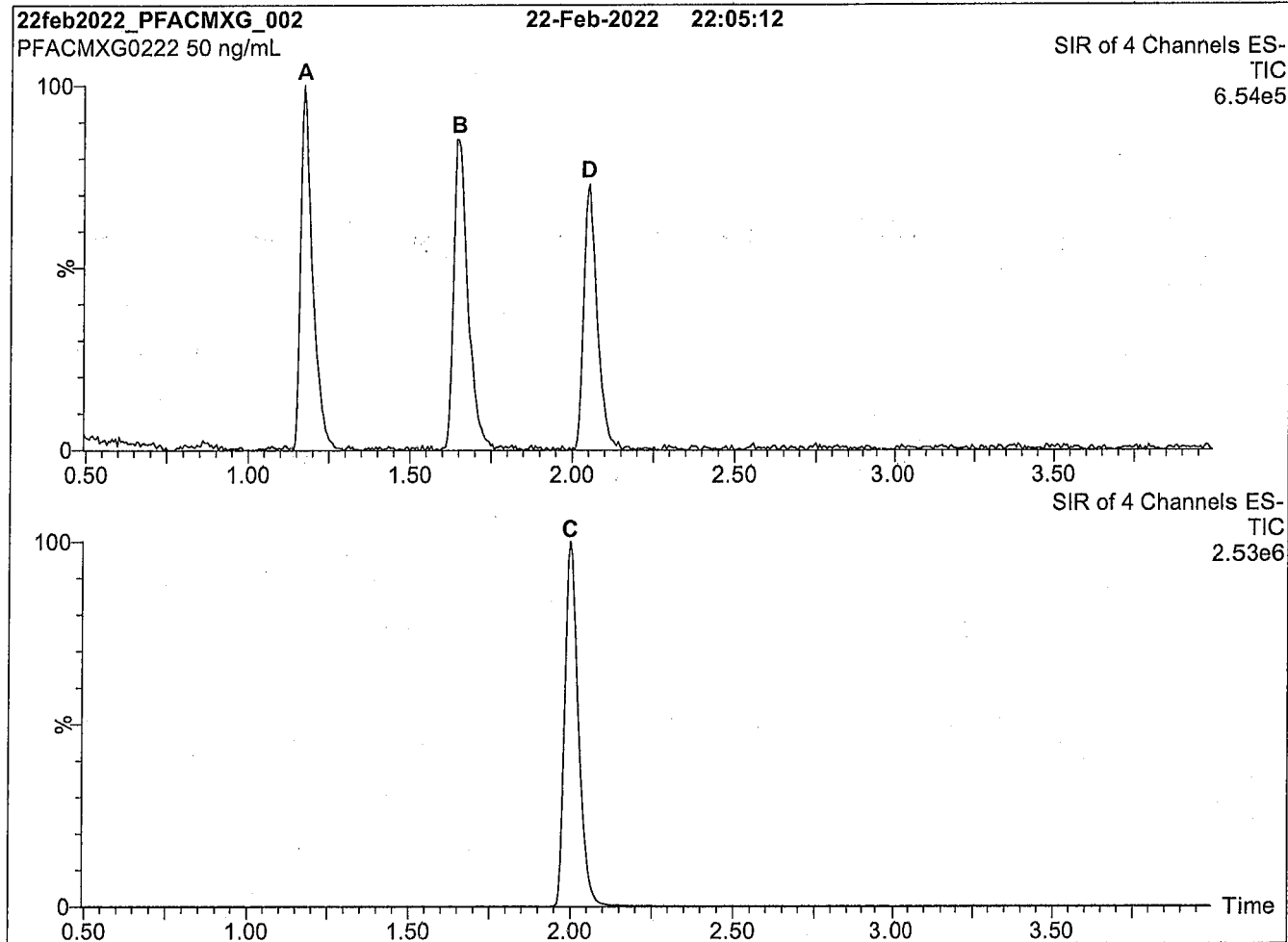
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure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

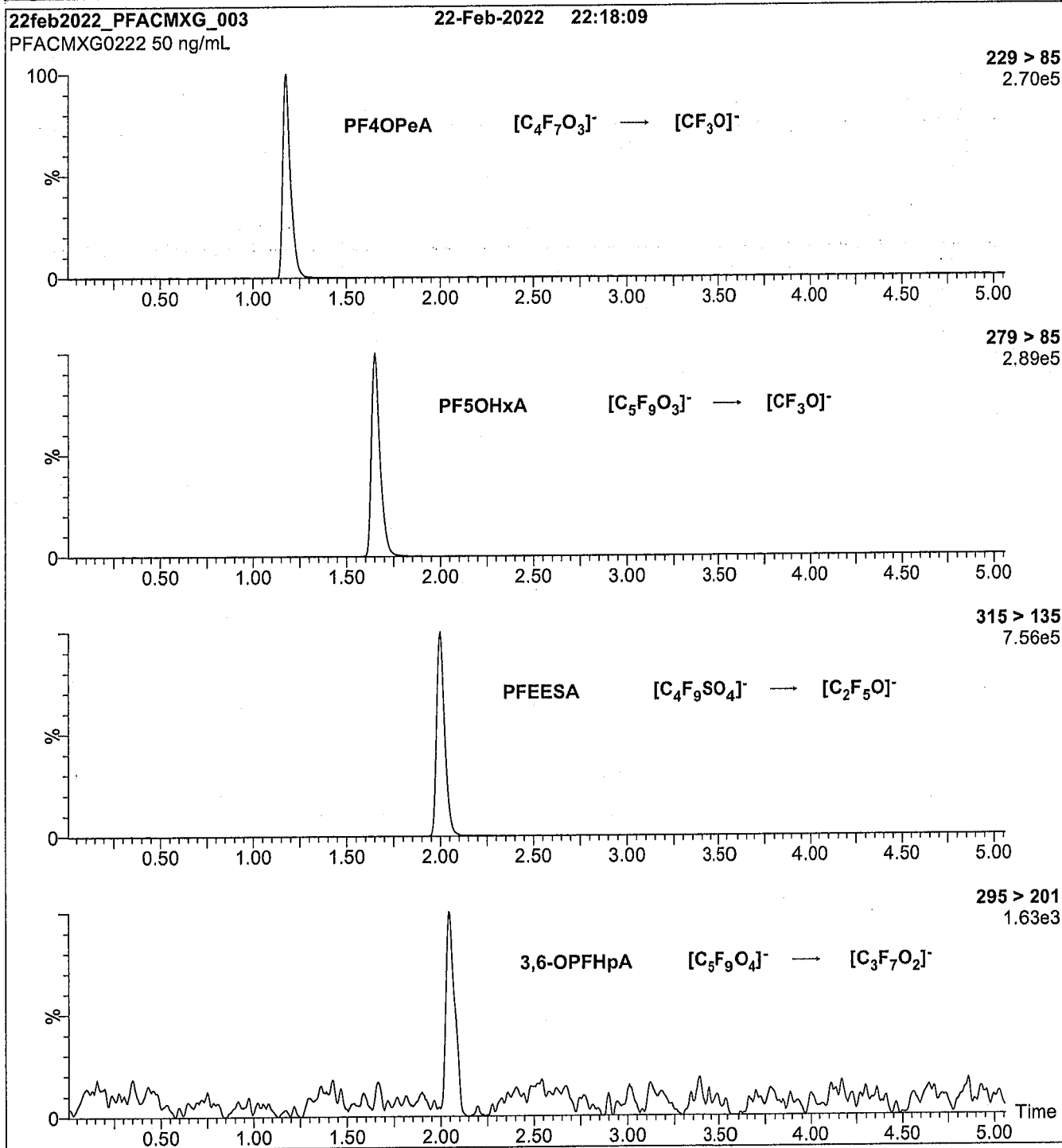
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

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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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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

Table A: 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	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	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-butanefulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: Σ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: Σ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	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-perfluorodecanesulfonate	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
 Standard Type: Analyte Spike
 Solvent: MeOH 62244
 Final Volume (mL): 6
 Vials: 1

Expires: 01/11/2025
 Prepared: 10/31/2022
 Prepared By: Dipti Gokal
 Department: PFAS
 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

Analytical Standard Record

22K0039

Description: PFAS - MIX 1633 10ng/mL
 Standard Type: Analyte Spike
 Solvent: MeOH
 Final Volume (mLs): 10
 Vials: 1

Expires: 05/01/2023
 Prepared: 11/02/2022
 Prepared By: Andonios Karas
 Department: PFAS
 Last Edit: 11/02/2022 12:56 by ABK

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

22K0039**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

22K0055

Description:	MPFAC-HIF-ES-EIS	Expires:	08/02/2025
Standard Type:	Other	Prepared:	11/02/2022
Solvent:	meoh	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	11/02/2022 15:37 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL

Analytical Standard Record

22K0055

Description:	MPFAC-HIF-ES-EIS	Expires:	08/02/2025
Standard Type:	Other	Prepared:	07/20/2022
Solvent:	meoh	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES0822)
Final Volume (mls):	1.2	Department:	MPFACHIFES0822)
Vials:	1	Last Edit:	11/04/2022 10:46 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

<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)



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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)



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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

22K0097

Description:	MPFAC-HIF-ES-EIS	Expires:	08/02/2025
Standard Type:	Other	Prepared:	07/20/2022
Solvent:	meoh	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES0822)
Final Volume (mls):	1.2	Department:	MPFACHIFES0822)
Vials:	1	Last Edit:	11/04/2022 10:47 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUhA		13C7-PFUhA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



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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%))

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		as the salt	as the acid	
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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
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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	
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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

22L0020

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	05/30/2023
Standard Type:	Surrogate Spike	Prepared:	12/01/2022
Solvent:	MeOH/62244	Prepared By:	Andonios Karas
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	12/01/2022 17:40 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	22K0055	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0055	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0055	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0055	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0055	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0055	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0055	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0055	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0055	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0055	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0055	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0055	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0055	13C6-PFDA	0.01	ug/mL
13C7-PFUHA	22K0055	13C7-PFUHA	0.01	ug/mL
13C8-PFOA	22K0055	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0055	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0055	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0055	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0055	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0055	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0055	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0055	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0055	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSSE	22K0055	D9-NETFOSSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22K0055	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:15 by DAG	0.4

Analytical Standard Record

22L0117

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	06/05/2023
Standard Type:	Surrogate Spike	Prepared:	12/07/2022
Solvent:	MeOH/62244	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	3	Last Edit:	12/07/2022 10:55 by DAG
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	22K0097	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0097	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0097	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0097	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0097	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0097	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0097	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0097	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0097	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0097	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0097	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0097	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0097	13C6-PFDA	0.01	ug/mL
13C7-PFU _n A	22K0097	13C7-PFU _n A	0.01	ug/mL
13C8-PFOA	22K0097	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0097	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0097	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0097	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0097	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0097	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0097	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0097	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0097	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSAE	22K0097	D9-NETFOSAE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22K0097	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:17 by DAG	0.4

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-PFU _n A	22K0095	13C7-PFU _n A	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-NETFOSAE	22K0095	D9-NETFOSAE	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

Analytical Standard Record

22L0359

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	06/19/2023
Standard Type:	Surrogate Spike	Prepared:	12/21/2022
Solvent:	MeOH/62244	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	3	Last Edit:	12/21/2022 10:46 by DAG
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	22K0096	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0096	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0096	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0096	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0096	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0096	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0096	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0096	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0096	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0096	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0096	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0096	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0096	13C6-PFDA	0.01	ug/mL
13C7-PFU _n A	22K0096	13C7-PFU _n A	0.01	ug/mL
13C8-PFOA	22K0096	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0096	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0096	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0096	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0096	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0096	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0096	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0096	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0096	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSSE	22K0096	D9-NETFOSSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22K0096	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:16 by DAG	0.4