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

April 17, 2023

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

RE: Red Hill AFFF Assessment Sampling
23C0239

Enclosed are the results of analyses for samples received by our laboratory on 3/28/2023. If you have any questions concerning this report, please feel free to contact me.

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

Sincerely,

Karen Volpendesta
Project Manager

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1001 Bishop Street, Suite 1600
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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling / 60697810
Project Manager: Watson Tanji

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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.

Samples 01 - AF-RHMW17-WGN01LF-2303W3, 02 - AF-RHMW17D-WGN01LF-2303W3, and 03 - AF-RHMW17D-WQFB01-2303W3 were re-extracted due to failing quality control. Only the re-extraction data has been provided.

The analytes PFHxA, 6:2FTS, and 5:3FTcA recovered above the upper control limit in the SC01502-LCV1.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
23C0239-01	AF-RHMW17-WGN01LF-2303W3	Water	03/24/2023 12:35	03/28/2023
23C0239-02	AF-RHMW17D-WGN01LF-2303W3	Water	03/24/2023 11:10	03/28/2023
23C0239-03	AF-RHMW17D-WQFB01-2303W3	Water	03/24/2023 10:00	03/28/2023

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Containers Received

Lab ID	Container Type	Count	Preservation Check
23C0239-01	500mL P	2	
23C0239-02	500mL P	2	
23C0239-03	500mL P	2	

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Sample Results

Sample: AF-RHMW17-WGN01LF-2303W3
23C0239-01 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	4.3	1.4	0.71	0.19	ng/L	04/14/23	1	EPA 1633	BCD0119
PFPEA	9.4	0.71	0.36	0.058	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHXA	4.8	0.36	0.18	0.049	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHPA	1.1	0.36	0.18	0.037	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOA	0.39	0.36	0.27	0.14	ng/L	04/14/23	1	EPA 1633	BCD0119
PFNA	0.12 J IR2,	0.36	0.18	0.073	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDA	0.095 J	0.36	0.18	0.090	ng/L	04/14/23	1	EPA 1633	BCD0119
PFUnA	0.27 U	0.36	0.27	0.14	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDOA	0.18 U	0.36	0.18	0.10	ng/L	04/14/23	1	EPA 1633	BCD0119
PFTRDA	0.27 U	0.36	0.27	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
PFTEDA	0.27 U	0.36	0.27	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
PFBS	0.18 J	0.36	0.18	0.033	ng/L	04/14/23	1	EPA 1633	BCD0119
PFPEs	0.18 U	0.36	0.18	0.056	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHXS	0.044 J IR2,	0.36	0.18	0.028	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHPS	0.18 U	0.36	0.18	0.046	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOS	0.12 J	0.36	0.18	0.057	ng/L	04/14/23	1	EPA 1633	BCD0119
PFNS	0.18 U	0.36	0.18	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDS	0.27 U	0.36	0.27	0.14	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDOS	0.18 U	0.36	0.18	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
4:2FTS	0.71 U	1.4	0.71	0.26	ng/L	04/14/23	1	EPA 1633	BCD0119
6:2FTS	6.0	1.4	0.71	0.28	ng/L	04/14/23	1	EPA 1633	BCD0119
8:2FTS	0.71 U	1.4	0.71	0.073	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOSA	0.32 J	0.36	0.18	0.093	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSA	0.71 U	1.4	0.71	0.42	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSA	0.71 U	1.4	0.71	0.37	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSAA	0.18 U	0.36	0.18	0.094	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSAA	0.18 U	0.36	0.18	0.10	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSE	1.1 U	1.4	1.1	0.90	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSE	1.1 U	1.4	1.1	0.93	ng/L	04/14/23	1	EPA 1633	BCD0119
HFPO-DA	0.36 U	0.71	0.36	0.16	ng/L	04/14/23	1	EPA 1633	BCD0119
ADONA	0.36 U	0.71	0.36	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
PFEESA	0.36 U	0.71	0.36	0.097	ng/L	04/14/23	1	EPA 1633	BCD0119
PFMPA	0.36 U	0.71	0.36	0.048	ng/L	04/14/23	1	EPA 1633	BCD0119
PFMBA	0.36 U	0.71	0.36	0.081	ng/L	04/14/23	1	EPA 1633	BCD0119
NFDHA	0.36 U	0.71	0.36	0.27	ng/L	04/14/23	1	EPA 1633	BCD0119
9CL-PF3ONS	0.36 U	0.71	0.36	0.19	ng/L	04/14/23	1	EPA 1633	BCD0119
11CL-PF3OUDS	0.36 U	0.71	0.36	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
3:3FTCA	0.71 U	1.4	0.71	0.51	ng/L	04/14/23	1	EPA 1633	BCD0119
5:3FTCA	0.71 U	1.4	0.71	0.40	ng/L	04/14/23	1	EPA 1633	BCD0119
7:3FTCA	0.71 U	1.4	0.71	0.49	ng/L	04/14/23	1	EPA 1633	BCD0119
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Surrogate: 13C4-PFBA	80.5%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C5-PFPEA	81.6%		35-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C5-PFHXA	89.4%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C4-PFHPA	97.3%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOA	90.5%		60-140			04/14/23	1	EPA 1633	BCD0119

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Project: Red Hill AFFF Assessment Sampling
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Sample Results (Continued)

Sample: AF-RHMW17-WGN01LF-2303W3 (Continued)
23C0239-01 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	91.1%		55-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C6-PFDA	89.0%		50-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C7-PFUnA	80.1%		30-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-PFDOA	59.0%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-PFTEDA	40.0%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-PFBS	86.9%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-PFHXS	95.9%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOS	88.6%		45-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-4:2FTS	114%		60-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-6:2FTS	111%		60-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-8:2FTS	75.8%		50-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOA	72.4%		30-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D3-NMEFOA	51.7%		15-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D5-NETFOA	56.0%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D3-NMEFOA	82.9%		45-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: D5-NETFOA	82.6%		10-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: D7-NMEFOSE	36.8%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: D9-NETFOSE	68.0%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-HFPO-DA	83.8%		25-160			04/14/23	1	EPA 1633	BCD0119

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Sample Results (Continued)

**Sample: AF-RHMW17D-WGN01LF-2303W3
23C0239-02 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.75 U	1.5	0.75	0.19	ng/L	04/14/23	1	EPA 1633	BCD0119
PFPEA	0.20 J	0.75	0.37	0.061	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHXA	0.19 U	0.37	0.19	0.051	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHPA	0.075 J IR2,	0.37	0.19	0.038	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOA	0.28 U	0.37	0.28	0.14	ng/L	04/14/23	1	EPA 1633	BCD0119
PFNA	0.19 U	0.37	0.19	0.077	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDA	0.19 U IR1,	0.37	0.19	0.095	ng/L	04/14/23	1	EPA 1633	BCD0119
PFUnA	0.28 U	0.37	0.28	0.15	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDOA	0.19 U	0.37	0.19	0.10	ng/L	04/14/23	1	EPA 1633	BCD0119
PFTRDA	0.28 U	0.37	0.28	0.19	ng/L	04/14/23	1	EPA 1633	BCD0119
PFTEDA	0.28 U	0.37	0.28	0.19	ng/L	04/14/23	1	EPA 1633	BCD0119
PFBS	0.078 J	0.37	0.19	0.034	ng/L	04/14/23	1	EPA 1633	BCD0119
PFPEs	0.19 U	0.37	0.19	0.059	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHXS	0.077 J IR2,	0.37	0.19	0.030	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHPS	0.19 U	0.37	0.19	0.048	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOS	0.13 J	0.37	0.19	0.060	ng/L	04/14/23	1	EPA 1633	BCD0119
PFNS	0.19 U	0.37	0.19	0.12	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDS	0.28 U	0.37	0.28	0.14	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDOS	0.19 U	0.37	0.19	0.12	ng/L	04/14/23	1	EPA 1633	BCD0119
4:2FTS	0.75 U	1.5	0.75	0.27	ng/L	04/14/23	1	EPA 1633	BCD0119
6:2FTS	2.8	1.5	0.75	0.29	ng/L	04/14/23	1	EPA 1633	BCD0119
8:2FTS	0.75 U	1.5	0.75	0.077	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOSA	0.19 U	0.37	0.19	0.098	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSA	0.75 U	1.5	0.75	0.44	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSA	0.75 U	1.5	0.75	0.39	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSAA	0.19 U	0.37	0.19	0.099	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSAA	0.19 U	0.37	0.19	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSE	1.1 U	1.5	1.1	0.95	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSE	1.1 U	1.5	1.1	0.98	ng/L	04/14/23	1	EPA 1633	BCD0119
HFPO-DA	0.37 U	0.75	0.37	0.16	ng/L	04/14/23	1	EPA 1633	BCD0119
ADONA	0.37 U	0.75	0.37	0.12	ng/L	04/14/23	1	EPA 1633	BCD0119
PFEESA	0.37 U	0.75	0.37	0.10	ng/L	04/14/23	1	EPA 1633	BCD0119
PFMPA	0.37 U	0.75	0.37	0.051	ng/L	04/14/23	1	EPA 1633	BCD0119
PFMBA	0.37 U	0.75	0.37	0.085	ng/L	04/14/23	1	EPA 1633	BCD0119
NFDHA	0.37 U	0.75	0.37	0.28	ng/L	04/14/23	1	EPA 1633	BCD0119
9CL-PF3ONS	0.37 U	0.75	0.37	0.20	ng/L	04/14/23	1	EPA 1633	BCD0119
11CL-PF3OUDS	0.37 U	0.75	0.37	0.19	ng/L	04/14/23	1	EPA 1633	BCD0119
3:3FTCA	0.75 U	1.5	0.75	0.54	ng/L	04/14/23	1	EPA 1633	BCD0119
5:3FTCA	0.75 U	1.5	0.75	0.42	ng/L	04/14/23	1	EPA 1633	BCD0119
7:3FTCA	0.75 U	1.5	0.75	0.52	ng/L	04/14/23	1	EPA 1633	BCD0119
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Surrogate: 13C4-PFBA	36.0%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C5-PFPEA	65.7%		35-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C5-PFHXA	80.3%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C4-PFHPA	70.8%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOA	87.2%		60-140			04/14/23	1	EPA 1633	BCD0119

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Sample Results (Continued)

Sample: AF-RHMW17D-WGN01LF-2303W3 (Continued)
23C0239-02 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	101%		55-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C6-PFDA	90.4%		50-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C7-PFUnA	124%		30-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-PFDOA	120%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-PFTEDA	90.5%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-PFBS	96.5%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-PFHXS	86.4%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOS	90.8%		45-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-4:2FTS	206% S2		60-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-4:2FTS	120%		60-200			04/14/23	10	EPA 1633	BCD0119
Surrogate: 13C2-6:2FTS	199%		60-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-8:2FTS	155%		50-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOA	101%		30-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D3-NMEFOA	67.9%		15-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D5-NETFOA	64.1%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D3-NMEFOSAA	84.1%		45-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: D5-NETFOSAA	126%		10-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: D7-NMEFOSE	39.8%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: D9-NETFOSE	64.9%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-HFPO-DA	74.8%		25-160			04/14/23	1	EPA 1633	BCD0119

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Project Manager: Watson Tanji

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Sample Results (Continued)

**Sample: AF-RHMW17D-WQFB01-2303W3
23C0239-03 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.69 U	1.4	0.69	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
PFPEA	0.14 J	0.69	0.34	0.056	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHXA	0.17 U	0.34	0.17	0.047	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHPA	0.13 J	0.34	0.17	0.035	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOA	0.26 U IR1,	0.34	0.26	0.13	ng/L	04/14/23	1	EPA 1633	BCD0119
PFNA	0.17 U	0.34	0.17	0.070	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDA	0.17 U IR2,	0.34	0.17	0.087	ng/L	04/14/23	1	EPA 1633	BCD0119
PFUnA	0.26 U	0.34	0.26	0.14	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDOA	0.17 U	0.34	0.17	0.096	ng/L	04/14/23	1	EPA 1633	BCD0119
PFTRDA	0.26 U	0.34	0.26	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
PFTEDA	0.26 U	0.34	0.26	0.17	ng/L	04/14/23	1	EPA 1633	BCD0119
PFBS	0.17 U	0.34	0.17	0.032	ng/L	04/14/23	1	EPA 1633	BCD0119
PFPEs	0.17 U	0.34	0.17	0.054	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHXS	0.17 U IR2,	0.34	0.17	0.027	ng/L	04/14/23	1	EPA 1633	BCD0119
PFHPS	0.17 U	0.34	0.17	0.044	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOS	0.088 J IR2,	0.34	0.17	0.055	ng/L	04/14/23	1	EPA 1633	BCD0119
PFNS	0.17 U	0.34	0.17	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDS	0.26 U	0.34	0.26	0.13	ng/L	04/14/23	1	EPA 1633	BCD0119
PFDOS	0.17 U	0.34	0.17	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
4:2FTS	0.69 U	1.4	0.69	0.25	ng/L	04/14/23	1	EPA 1633	BCD0119
6:2FTS	0.69 U	1.4	0.69	0.27	ng/L	04/14/23	1	EPA 1633	BCD0119
8:2FTS	0.69 U	1.4	0.69	0.071	ng/L	04/14/23	1	EPA 1633	BCD0119
PFOSA	0.17 U	0.34	0.17	0.090	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSA	0.69 U	1.4	0.69	0.41	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSA	0.69 U	1.4	0.69	0.35	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSAA	0.17 U	0.34	0.17	0.091	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSAA	0.17 U	0.34	0.17	0.099	ng/L	04/14/23	1	EPA 1633	BCD0119
NMeFOSE	1.0 U	1.4	1.0	0.87	ng/L	04/14/23	1	EPA 1633	BCD0119
NEtFOSE	1.0 U	1.4	1.0	0.90	ng/L	04/14/23	1	EPA 1633	BCD0119
HFPO-DA	0.34 U	0.69	0.34	0.15	ng/L	04/14/23	1	EPA 1633	BCD0119
ADONA	0.34 U	0.69	0.34	0.11	ng/L	04/14/23	1	EPA 1633	BCD0119
PFEESA	0.34 U	0.69	0.34	0.094	ng/L	04/14/23	1	EPA 1633	BCD0119
PFMPA	0.34 U	0.69	0.34	0.046	ng/L	04/14/23	1	EPA 1633	BCD0119
PFMBA	0.34 U	0.69	0.34	0.078	ng/L	04/14/23	1	EPA 1633	BCD0119
NFDHA	0.34 U	0.69	0.34	0.26	ng/L	04/14/23	1	EPA 1633	BCD0119
9CL-PF3ONS	0.34 U	0.69	0.34	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
11CL-PF3OUDS	0.34 U	0.69	0.34	0.18	ng/L	04/14/23	1	EPA 1633	BCD0119
3:3FTCA	0.69 U	1.4	0.69	0.49	ng/L	04/14/23	1	EPA 1633	BCD0119
5:3FTCA	0.69 U	1.4	0.69	0.38	ng/L	04/14/23	1	EPA 1633	BCD0119
7:3FTCA	0.69 U	1.4	0.69	0.48	ng/L	04/14/23	1	EPA 1633	BCD0119
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Surrogate: 13C4-PFBA	96.9%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C5-PFPEA	89.0%		35-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C5-PFHXA	91.0%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C4-PFHPA	103%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOA	95.8%		60-140			04/14/23	1	EPA 1633	BCD0119

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Sample Results (Continued)

Sample: AF-RHMW17D-WQFB01-2303W3 (Continued)
23C0239-03 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	96.1%		55-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C6-PFDA	93.5%		50-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C7-PFUnA	91.6%		30-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-PFDOA	98.7%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-PFTEDA	86.8%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-PFBS	89.6%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-PFHXS	89.7%		55-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOS	89.1%		45-140			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-4:2FTS	92.6%		60-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-6:2FTS	95.8%		60-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C2-8:2FTS	77.4%		50-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C8-PFOA	75.8%		30-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D3-NMEFOA	35.2%		15-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D5-NETFOA	32.9%		10-130			04/14/23	1	EPA 1633	BCD0119
Surrogate: D3-NMEFOA	81.0%		45-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: D5-NETFOA	80.7%		10-200			04/14/23	1	EPA 1633	BCD0119
Surrogate: D7-NMEFOSE	53.9%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: D9-NETFOSE	58.1%		10-150			04/14/23	1	EPA 1633	BCD0119
Surrogate: 13C3-HFPO-DA	89.9%		25-160			04/14/23	1	EPA 1633	BCD0119

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Quality Control

Per- and Polyfluoroalkyl Substances

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

Batch: BCD0119 - EPA 1633

Blank (BCD0119-BLK1)

Prepared: 04/10/23 08:18 Analyzed: 04/14/23 15:47

	ng/L			
PFBA	0.80 U	1.6	0.80	0.21
PFPEA	0.40 U	0.80	0.40	0.065
PFHXA	0.20 U	0.40	0.20	0.055
PFHPA	0.20 U	0.40	0.20	0.041
PFOA	0.30 U	0.40	0.30	0.15
PFNA	0.20 U	0.40	0.20	0.082
PFDA	0.20 U	0.40	0.20	0.10
PFUnA	0.30 U	0.40	0.30	0.16
PFDOA	0.20 U	0.40	0.20	0.11
PFTRDA	0.30 U	0.40	0.30	0.20
PFTEDA	0.30 U	0.40	0.30	0.20
PFBS	0.20 U	0.40	0.20	0.037
PFPEs	0.20 U	0.40	0.20	0.063
PFHXS	0.20 U	0.40	0.20	0.032
PFHPS	0.20 U	0.40	0.20	0.051
PFOS	0.166 J MI2,	0.40	0.20	0.064
PFNS	0.20 U	0.40	0.20	0.12
PFDS	0.30 U	0.40	0.30	0.15
PFDOS	0.20 U	0.40	0.20	0.12
4:2FTS	0.80 U	1.6	0.80	0.29
6:2FTS	0.80 U	1.6	0.80	0.31
8:2FTS	0.80 U	1.6	0.80	0.082
PFOSA	0.20 U	0.40	0.20	0.10
NMeFOSA	0.80 U	1.6	0.80	0.47
NEtFOSA	0.80 U	1.6	0.80	0.41
NMeFOSAA	0.20 U	0.40	0.20	0.11
NEtFOSAA	0.20 U	0.40	0.20	0.11
NMeFOSE	1.2 U	1.6	1.2	1.0
NEtFOSE	1.2 U	1.6	1.2	1.0
HFPO-DA	0.40 U	0.80	0.40	0.17
ADONA	0.40 U	0.80	0.40	0.12
PFEESA	0.40 U	0.80	0.40	0.11
PFMPA	0.40 U	0.80	0.40	0.054
PFMBA	0.40 U	0.80	0.40	0.091
NFDHA	0.40 U	0.80	0.40	0.30
9CL-PF3ONS	0.40 U	0.80	0.40	0.21
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21
3:3FTCA	0.80 U	1.6	0.80	0.57
5:3FTCA	0.80 U	1.6	0.80	0.44
7:3FTCA	0.80 U	1.6	0.80	0.55

Surrogates

13C4-PFBA	28.6	32.0	89.3	10-130
13C5-PFPEA	14.1	16.0	88.4	35-150
13C5-PFHXA	7.08	8.00	88.5	55-150

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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
Blank (BCD0119-BLK1)						Prepared: 04/10/23 08:18 Analyzed: 04/14/23 15:47				
	ng/L									
Surrogates										
13C4-PFHPA	7.72				8.00		96.5	55-150		
13C8-PFOA	7.13				8.00		89.2	60-140		
13C9-PFNA	3.40				4.00		84.9	55-140		
13C6-PFDA	3.06				4.00		76.6	50-140		
13C7-PFUnA	3.33				4.00		83.1	30-140		
13C2-PFDOA	3.21				4.00		80.2	10-150		
13C2-PFTEDA	2.63				4.00		65.7	10-130		
13C3-PFBS	6.14				8.00		76.8	55-150		
13C3-PFHXS	6.83				8.00		85.4	55-150		
13C8-PFOS	6.55				8.00		81.9	45-140		
13C2-4:2FTS	13.5				16.0		84.6	60-200		
13C2-6:2FTS	13.9				16.0		86.9	60-200		
13C2-8:2FTS	11.4				16.0		71.1	50-200		
13C8-PFOA	5.40				8.00		67.4	30-130		
D3-NMEFOA	2.09				8.00		26.1	15-130		
D5-NETFOA	1.78				8.00		22.3	10-130		
D3-NMEFOSAA	11.2				16.0		69.8	45-200		
D5-NETFOSAA	10.5				16.0		65.9	10-200		
D7-NMEFOSE	37.1				80.0		46.3	10-150		
D9-NETFOSE	41.3				80.0		51.7	10-150		
13C3-HFPO-DA	25.8				32.0		80.5	25-160		

LCS (BCD0119-BS1)

Prepared: 04/10/23 08:18 Analyzed: 04/14/23 16:00

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
PFBA	16.2				16.0		101	58-148		
PFPEA	7.80				8.00		97.5	54-152		
PFHXA	4.00				4.00		99.9	55-152		
PFHPA	4.25				4.00		106	54-154		
PFOA	4.07				4.00		102	52-161		
PFNA	4.03				4.00		101	59-149		
PFDA	3.70				4.00		92.6	52-147		
PFUnA	3.66				4.00		91.5	48-159		
PFDOA	4.35				4.00		109	64-142		
PFTRDA	3.99				4.00		99.8	49-148		
PFTEDA	4.44				4.00		111	47-161		
PFBS	3.43				3.54		96.8	62-144		
PFPEA	3.83				3.76		102	59-151		
PFHXS	3.64				3.66		99.5	57-146		
PFHPS	4.01				3.82		105	55-152		
PFOS	3.74				3.72		100	58-149		
PFNS	3.55				3.84		92.5	52-148		
PFDS	3.21				3.86		83.2	51-147		
PFDOS	3.19				3.88		82.1	36-145		
4:2FTS	14.4				15.0		96.1	67-146		
6:2FTS	17.2				15.2		113	61-151		
8:2FTS	14.9				15.4		97.0	63-152		
PFOSA	4.73				4.00		118	61-148		

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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
LCS (BCD0119-BS1)						Prepared: 04/10/23 08:18 Analyzed: 04/14/23 16:00				
	ng/L									
NMeFOSA	15.6				16.0		97.7	63-145		
NETFOSA	15.4				16.0		96.6	65-139		
NMeFOSAA	3.67				4.00		91.8	58-144		
NETFOSAA	3.58				4.00		89.5	59-146		
NMeFOSE	17.2				16.0		107	71-136		
NETFOSE	15.7				16.0		97.9	69-137		
HFPO-DA	7.95				8.00		99.4	63-144		
ADONA	8.44				7.56		112	68-146		
PFEESA	6.95				7.12		97.6	56-151		
PFMPA	8.79				8.00		110	51-145		
PFMBA	7.79				8.00		97.3	55-148		
NFDHA	7.68				8.00		96.0	48-161		
9CL-PF3ONS	7.99				7.48		107	56-156		
11CL-PF3OUDS	7.13				7.56		94.3	46-156		
3:3FTCA	16.1				16.0		100	62-129		
5:3FTCA	14.8				16.0		92.7	63-134		
7:3FTCA	15.5				16.0		97.0	50-138		
Surrogates										
13C4-PFBA	31.0				32.0		97.0	10-130		
13C5-PFPEA	15.8				16.0		98.8	35-150		
13C5-PFHXA	7.79				8.00		97.4	55-150		
13C4-PFHFA	8.39				8.00		105	55-150		
13C8-PFOA	7.98				8.00		99.8	60-140		
13C9-PFNA	3.88				4.00		97.1	55-140		
13C6-PFDA	3.94				4.00		98.4	50-140		
13C7-PFUa	4.37				4.00		109	30-140		
13C2-PFDOA	3.91				4.00		97.8	10-150		
13C2-PFTEDA	3.33				4.00		83.2	10-130		
13C3-PFBS	7.22				8.00		90.2	55-150		
13C3-PFHXS	7.61				8.00		95.1	55-150		
13C8-PFOS	7.11				8.00		88.9	45-140		
13C2-4:2FTS	15.1				16.0		94.3	60-200		
13C2-6:2FTS	15.8				16.0		98.5	60-200		
13C2-8:2FTS	14.9				16.0		93.3	50-200		
13C8-PFOA	5.71				8.00		71.4	30-130		
D3-NMEFOSA	2.94				8.00		36.7	15-130		
D5-NETFOSA	3.10				8.00		38.8	10-130		
D3-NMEFOSAA	12.2				16.0		76.3	45-200		
D5-NETFOSAA	11.6				16.0		72.3	10-200		
D7-NMEFOSE	35.5				80.0		44.3	10-150		
D9-NETFOSSE	63.2				80.0		79.0	10-150		
13C3-HFPO-DA	29.1				32.0		90.8	25-160		

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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
MRL Check (BCD0119-MRL1)						Prepared: 04/10/23 08:18 Analyzed: 04/14/23 16:12				
	ng/L									
PFBA	1.42 J				1.60		88.7	44-157		
PFPEA	0.746 J				0.800		93.3	57-148		
PFHXA	0.462				0.400		116	62-149		
PFHPA	0.483 IR2				0.400		121	56-150		
PFOA	0.523				0.400		131	57-161		
PFNA	0.440				0.400		110	53-157		
PFDA	0.477 IR1				0.400		119	43-158		
PFUnA	0.306 J				0.400		76.6	50-155		
PFDOA	0.412				0.400		103	60-141		
PFTRDA	0.365 J				0.400		91.3	52-140		
PFTEDA	0.406				0.400		101	52-156		
PFBS	0.309 J				0.354		87.4	63-145		
PFPEs	0.330 J				0.376		87.8	58-144		
PFHXS	0.384 J				0.366		105	44-158		
PFHPS	0.353 J				0.382		92.4	51-150		
PFOS	0.450 M12				0.372		121	43-162		
PFNS	0.340 J				0.384		88.5	46-151		
PFDS	0.324 J				0.386		83.9	50-144		
PFDOS	0.282 J				0.388		72.6	30-138		
4:2FTS	1.36 J				1.50		90.9	52-158		
6:2FTS	2.39				1.52		157	48-158		
8:2FTS	1.41 J				1.54		92.0	46-165		
PFOSA	0.498				0.400		125	47-163		
NMeFOSA	1.53 J				1.60		95.7	54-155		
NETFOSA	1.40 J				1.60		87.7	49-156		
NMeFOSAA	0.322 J				0.400		80.4	32-160		
NETFOSAA	0.348 J				0.400		86.9	51-154		
NMeFOSE	1.42 J				1.60		88.5	56-151		
NETFOSE	1.34 J				1.60		84.0	60-147		
HFPO-DA	0.742 J				0.800		92.8	58-154		
ADONA	0.761 J				0.756		101	61-148		
PFEESA	0.581 J				0.712		81.6	56-144		
PFMPA	0.802				0.800		100	48-150		
PFMBA	0.860				0.800		108	49-154		
NFDHA	0.650 J				0.800		81.2	47-160		
9CL-PF3ONS	0.615 J				0.748		82.2	44-167		
11CL-PF3OUDS	0.703 J				0.756		93.0	36-158		
3:3FTCA	1.39 J				1.60		86.8	32-161		
5:3FTCA	1.63				1.60		102	39-156		
7:3FTCA	1.61				1.60		101	36-149		
Surrogates										
13C4-PFBA	31.7				32.0		99.2	10-130		
13C5-PFPEA	15.8				16.0		98.7	35-150		
13C5-PFHXA	7.90				8.00		98.7	55-150		
13C4-PFHPA	8.14				8.00		102	55-150		
13C8-PFOA	7.52				8.00		94.0	60-140		
13C9-PFNA	3.46				4.00		86.5	55-140		

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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
MRL Check (BCD0119-MRL1)						Prepared: 04/10/23 08:18 Analyzed: 04/14/23 16:12				
	ng/L									
Surrogates										
13C6-PFDA	3.62				4.00		90.4	50-140		
13C7-PFUnA	3.90				4.00		97.5	30-140		
13C2-PFDOA	3.89				4.00		97.3	10-150		
13C2-PFTEDA	3.58				4.00		89.4	10-130		
13C3-PFBS	6.52				8.00		81.5	55-150		
13C3-PFHXS	7.64				8.00		95.5	55-150		
13C8-PFOS	7.08				8.00		88.5	45-140		
13C2-4:2FTS	15.2				16.0		94.9	60-200		
13C2-6:2FTS	15.9				16.0		99.6	60-200		
13C2-8:2FTS	13.3				16.0		83.1	50-200		
13C8-PFOA	5.82				8.00		72.8	30-130		
D3-NMEFOA	2.70				8.00		33.8	15-130		
D5-NETFOA	2.79				8.00		34.9	10-130		
D3-NMEFOSAA	13.0				16.0		81.3	45-200		
D5-NETFOSAA	12.1				16.0		75.4	10-200		
D7-NMEFOSE	51.0				80.0		63.8	10-150		
D9-NETFOSE	59.3				80.0		74.1	10-150		
13C3-HFPO-DA	30.4				32.0		94.9	25-160		

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

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling / 60697810
Project Manager: Watson Tanji

Reported: 04/17/2023 12:22

Notes and Definitions

Item	Definition
CV2	Calibration verification recovered above the upper control limit
E	Response exceeds linear range
IR1	Ion ratio below the lower control limit
IR2	Ion ratio above the upper control limit
IS1	Internal standard recovered below the lower control limit
J	Estimated value
MI2	Manual integration, non-target peak interference
MI4	Manual integration, peak unsplit
S1	Surrogate recovered below the lower control limit
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
DF	Dilution Factor
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
*	Value outside control limits
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
LOQ, Limit of Quantitation = Method Reporting Limit (MRL).	



WORK ORDER

23C0239

Printed: 04/17/2023 12:22 pm

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling / 60697810
Project Manager: Karen Volpendesta
PO Number: 150712

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

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

Date Received: 03/28/2023 11:00 AM
 Date Due: 04/04/2023 (5.00 day TAT)

Logged In By: Megan Salata
 Received By: Megan Salata

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

23C0239

Sample Receipt Log

Default Cooler

Samples Received at: **1.2°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



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

ELECTRONIC CHAIN OF CUSTODY RECORD 23C0239
Phone: (559) 275-2175
Fax: (559) 275-4422
coc@applinc.com C.O.C. 2303W3AFAL10

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

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

Project Name/Number	Sampler (Print)	Turnaround Requested:			Date Collected	Time Collected	Time Zone	No. of Containers	Matrix		Analysis Requested/Method Number	Date Shipped:
		Standard 2-3 wk	3 days	24/48 Hrs.					Aq	Soil		
CTO N6274223F0104 / 60697810	TESSA MURPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3/24/23	1735	HST 2	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PFAS EPA Draft 1633	Carrier: Fed Ex Waybill No.: Comments: EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW
Purchase Order Number	Sampler (Signature) <i>Tanji</i>											
Sample Identification	Location RHMW17											
AF-RHMW17-WGN01F-2303W3												

Sample Disposal:	Time	Date	Relinquished by:	Received by:
<input type="checkbox"/> Return to client	1245	3/27/23	James Mason	James Mason
<input type="checkbox"/> Disposal by Lab (30-day retention)		3/28/23		

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

CUSTODY SEAL

AE/COM (808) 521-3051

initials GH Date 3/27/23

PFAS

SAMPLE DATA

FORM I ANALYSIS DATA SHEET

AF-RHMW17-WGN01LF-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23C0239-01RE2
		File ID:	S2023-04-14A (12)
Sampled:	03/24/23 12:35	Prepared:	04/10/23 08:18
		Analyzed:	04/14/23 16:51
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	560.73 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502
		Calibration:	2315014

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	4.3	1.4	0.71	0.19	
PFPEA	9.4	0.71	0.36	0.058	
PFHXA	4.8	0.36	0.18	0.049	
PFHPA	1.1	0.36	0.18	0.037	
PFOA	0.39	0.36	0.27	0.14	
PFNA	0.12 J	0.36	0.18	0.073	IR2,
PFDA	0.095 J	0.36	0.18	0.090	
PFUnA	0.27 U	0.36	0.27	0.14	
PFDOA	0.18 U	0.36	0.18	0.10	
PFTRDA	0.27 U	0.36	0.27	0.18	
PFTEDA	0.27 U	0.36	0.27	0.18	
PFBS	0.18 J	0.36	0.18	0.033	
PFPEs	0.18 U	0.36	0.18	0.056	
PFHXS	0.044 J	0.36	0.18	0.028	IR2,
PFHPS	0.18 U	0.36	0.18	0.046	
PFOS	0.12 J	0.36	0.18	0.057	
PFNS	0.18 U	0.36	0.18	0.11	
PFDS	0.27 U	0.36	0.27	0.14	
PFDOS	0.18 U	0.36	0.18	0.11	
4:2FTS	0.71 U	1.4	0.71	0.26	
6:2FTS	6.0	1.4	0.71	0.28	
8:2FTS	0.71 U	1.4	0.71	0.073	
PFOSA	0.32 J	0.36	0.18	0.093	
NMeFOSA	0.71 U	1.4	0.71	0.42	
NEtFOSA	0.71 U	1.4	0.71	0.37	
NMeFOSAA	0.18 U	0.36	0.18	0.094	
NEtFOSAA	0.18 U	0.36	0.18	0.10	
NMeFOSE	1.1 U	1.4	1.1	0.90	
NEtFOSE	1.1 U	1.4	1.1	0.93	
HFPO-DA	0.36 U	0.71	0.36	0.16	

FORM I ANALYSIS DATA SHEET

AF-RHMW17-WGN01LF-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23C0239-01RE2
		File ID:	S2023-04-14A (12)
Sampled:	03/24/23 12:35	Prepared:	04/10/23 08:18
		Analyzed:	04/14/23 16:51
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	560.73 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502
		Calibration:	2315014

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.36 U	0.71	0.36	0.11	
PFEESA	0.36 U	0.71	0.36	0.097	
PFMPA	0.36 U	0.71	0.36	0.048	
PFMBA	0.36 U	0.71	0.36	0.081	
NFDHA	0.36 U	0.71	0.36	0.27	
9CL-PF3ONS	0.36 U	0.71	0.36	0.19	
11CL-PF3OUDS	0.36 U	0.71	0.36	0.18	
3:3FTCA	0.71 U	1.4	0.71	0.51	
5:3FTCA	0.71 U	1.4	0.71	0.40	
7:3FTCA	0.71 U	1.4	0.71	0.49	

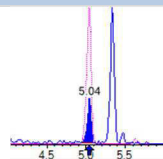
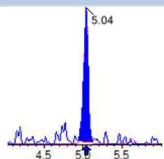
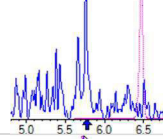
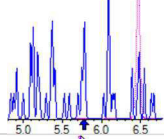
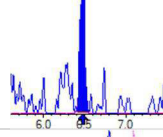
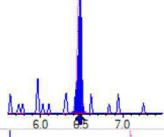
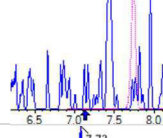
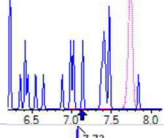
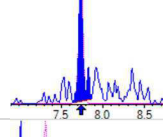
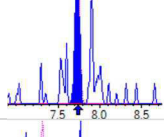
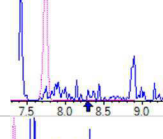
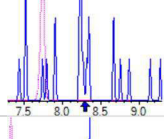
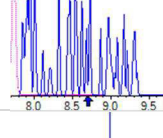
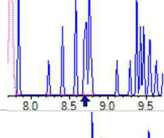
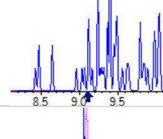
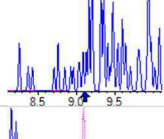
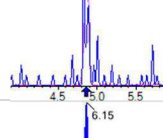
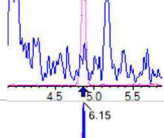
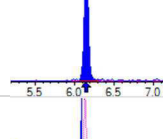
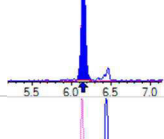
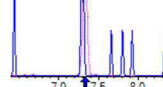
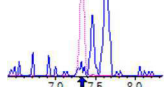


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

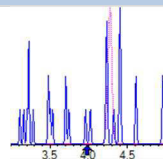
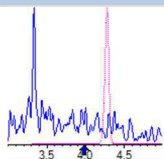
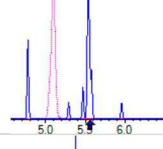
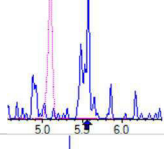
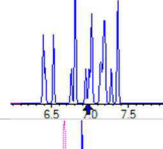
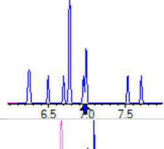
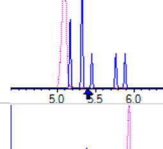
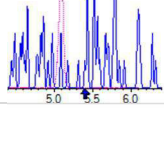
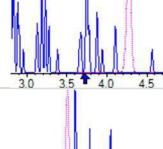
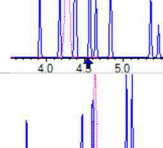
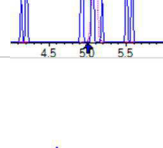
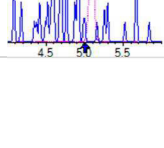
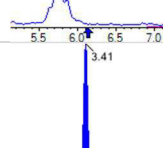
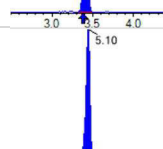
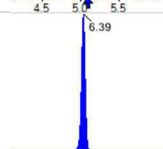
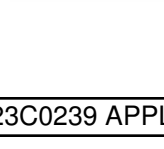
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 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

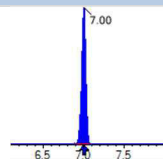
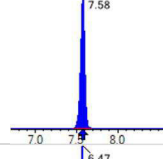
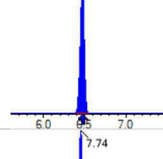
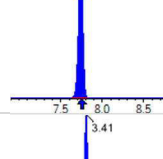
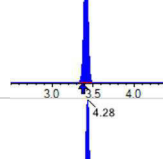
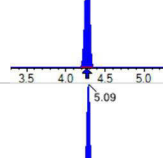
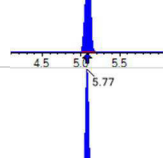
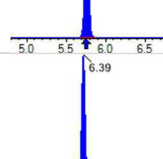
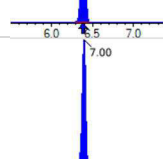
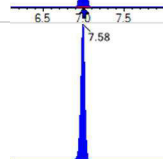
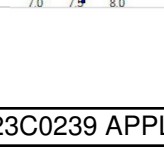
Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (12)
 Acquired: 2023/04/14 - 16:51

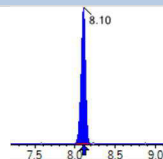
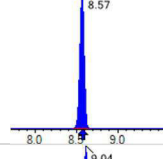
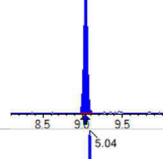
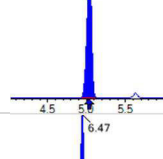
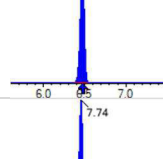
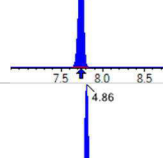
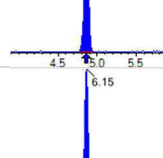
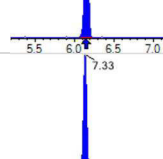
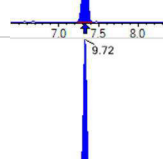
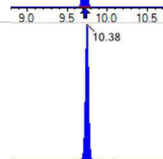
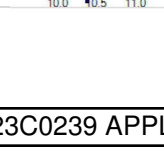
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 133327	(3.41, 1.00) (0.00, N/A, 0.0)	150.1	N/A 0.0 0.0	1.2093	N/A			
PFPeA	(263.0 / 219.0) 577356 (263.0 / 69.0) 7669	(4.28, 1.00) (0.00, N/A, 0.0)	904.2 40.6	0.0133 101.2 113.5	2.6224	N/A			
PFHxA	(313.0 / 269.0) 410000 (313.0 / 119.0) 39487	(5.10, 1.00) (0.00, N/A, 0.5)	442.5 320.4	0.0963 88.3 98.9	1.3384	N/A			
PFHpA	(363.0 / 319.0) 82503 (363.0 / 169.0) 24391	(5.77, 1.00) (0.00, N/A, -0.1)	357.7 4384.9	0.2956 96.8 95.0	0.3173	N/A			
PFOA	(413.0 / 369.0) 33292 (413.0 / 169.0) 14053	(6.39, 1.00) (0.00, N/A, -0.5)	87.7 378.5	0.4221 134.8 134.8	0.1102	N/A			
PFNA	(463.0 / 419.0) 9076 (463.0 / 169.0) 3026	(7.01, 1.00) (0.00, N/A, 1.5)	231.4 173.6	0.3334 156.2 161.7	0.0324	N/A			IR2,
PFDA	(513.0 / 469.0) 9319 (513.0 / 169.0) 898	(7.59, 1.00) (0.01, N/A, 0.6)	63.5 10320.4	0.0963 84.0 86.3	0.0267	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			

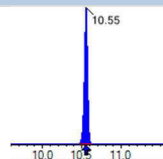
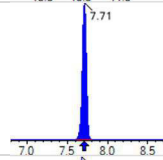
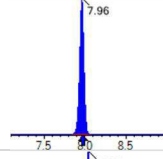
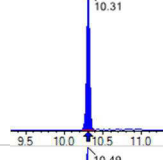
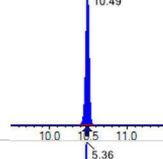
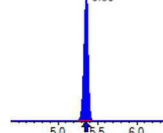
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 28065 (299.0 / 99.0) 22370	(5.04, 1.00) (0.00, N/A, 0.2)	62.0 90.7	0.7971 124.0 120.3	0.0518	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) 9474 (399.0 / 99.0) 5010	(6.47, 1.00) (0.00, N/A, -0.5)	53.4 351.5	0.5288 152.7 153.4	0.0122	N/A			IR2,
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) 35736 (499.0 / 99.0) 6919	(7.73, 1.00) (0.00, N/A, 0.3)	61.3 126.6	0.1936 86.5 84.1	0.0346	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 288782 (427.0 / 81.0) 189264	(6.15, 1.00) (0.00, N/A, -0.2)	384.3 283.0	0.6554 93.1 90.8	1.6914	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) 95073 (498.0 / 478.0) 1897	(9.72 , 1.00) (0.00 , N/A , -0.4)	462.5 32.7	0.0200 80.6 89.9	0.0895	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 147896	(3.41, N/A) (N/A, 0.04, N/A)	1346.8	N/A	1.2132 [1.0000]	121.3% { 117.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 250510	(5.10, N/A) (N/A, 0.01, N/A)	1287.9	N/A	1.2351 [1.0000]	123.5% { 125.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 358946	(6.39, N/A) (N/A, 0.01, N/A)	2445.8	N/A	1.1295 [1.0000]	113.0% { 108.4% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 355258	(7.00, N/A) (N/A, 0.00, N/A)	3353.4	N/A	1.1705 [1.0000]	117.1% { 110.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 372633	(7.58, N/A) (N/A, 0.00, N/A)	9083.6	N/A	1.1484 [1.0000]	114.8% { 113.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 556937	(6.47, N/A) (N/A, 0.01, N/A)	3007.1	N/A	1.2436 [1.0000]	124.4% { 114.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 851149	(7.74, N/A) (N/A, 0.00, N/A)	1970.3	N/A	1.2516 [1.0000]	125.2% { 120.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1009384	(3.41, N/A) (N/A, 0.04, N/A)	4748.7	N/A	6.4371 [8.0000]	80.5% { 92.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 916371	(4.28, N/A) (N/A, 0.01, N/A)	2341.0	N/A	3.2658 [4.0000]	81.6% { 106.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 635137	(5.09, N/A) (N/A, 0.01, N/A)	2427.2	N/A	1.7887 [2.0000]	89.4% { 108.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 603370	(5.77, N/A) (N/A, 0.01, N/A)	4277.6	N/A	1.9454 [2.0000]	97.3% { 110.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 641063	(6.39, N/A) (N/A, 0.01, N/A)	501148.5	N/A	1.8095 [2.0000]	90.5% { 97.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 304028	(7.00, N/A) (N/A, 0.01, N/A)	383829.7	N/A	0.9109 [1.0000]	91.1% { 95.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 371996	(7.58, N/A) (N/A, 0.00, N/A)	2752.9	N/A	0.8899 [1.0000]	89.0% { 105.8% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 310707	(8.10, N/A) (N/A, 0.00, N/A)	3081.2	N/A	0.8007 [1.0000]	80.1% { 85.2% }			
13C2_PFDa_EIS	(615.0 / 570.0) 196110	(8.57, N/A) (N/A, 0.00, N/A)	41500.7	N/A	0.5902 [1.0000]	59.0% { 74.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 125258	(9.04, N/A) (N/A, 0.01, N/A)	703.0	N/A	0.3998 [1.0000]	40.0% { 53.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1519493	(5.04, N/A) (N/A, 0.01, N/A)	1618.3	N/A	1.7378 [2.0000]	86.9% { 115.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 984590	(6.47, N/A) (N/A, 0.01, N/A)	2936.4	N/A	1.9179 [2.0000]	95.9% { 110.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1826905	(7.74, N/A) (N/A, 0.00, N/A)	2078.4	N/A	1.7717 [2.0000]	88.6% { 110.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 359624	(4.86, N/A) (N/A, 0.01, N/A)	691.1	N/A	4.5665 [4.0000]	114.2% { 150.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 399086	(6.15, N/A) (N/A, 0.01, N/A)	986.2	N/A	4.4401 [4.0000]	111.0% { 138.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 361026	(7.33, N/A) (N/A, 0.00, N/A)	933.9	N/A	3.0339 [4.0000]	75.8% { 97.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2423870	(9.72, N/A) (N/A, 0.00, N/A)	4268.6	N/A	1.4480 [2.0000]	72.4% { 99.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 369593	(10.38, N/A) (N/A, 0.01, N/A)	1695.9	N/A	1.0347 [2.0000]	51.7% { 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
D5_NEIFOSA_EIS	(531.0 / 169.0) 330288	(10.55, N/A) (N/A, 0.01, N/A)	2179.1	N/A	1.1207 [2.0000]	56.0% { 59.0% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 733258	(7.71, N/A) (N/A, 0.00, N/A)	2112.0	N/A	3.3177 [4.0000]	82.9% { 112.5% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 599284	(7.96, N/A) (N/A, -0.01, N/A)	5329.4	N/A	3.3059 [4.0000]	82.6% { 108.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 872840	(10.31, N/A) (N/A, 0.01, N/A)	1025.8	N/A	7.3601 [20.0000]	36.8% { 40.2% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2132993	(10.49, N/A) (N/A, 0.01, N/A)	1562.0	N/A	13.6084 [20.0000]	68.0% { 72.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1342327	(5.36, N/A) (N/A, 0.01, N/A)	2576.5	N/A	6.7012 [8.0000]	83.8% { 110.7% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW17D-WGN01LF-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23C0239-02RE2
		File ID:	S2023-04-14A (14)
Sampled:	03/24/23 11:10	Prepared:	04/10/23 08:18
		Analyzed:	04/14/23 17:17
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	533.62 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502
		Calibration:	2315014

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.75 U	1.5	0.75	0.19	
PFPEA	0.20 J	0.75	0.37	0.061	
PFHXA	0.19 U	0.37	0.19	0.051	
PFHPA	0.075 J	0.37	0.19	0.038	IR2,
PFOA	0.28 U	0.37	0.28	0.14	
PFNA	0.19 U	0.37	0.19	0.077	
PFDA	0.19 U	0.37	0.19	0.095	IR1,
PFUnA	0.28 U	0.37	0.28	0.15	
PFDOA	0.19 U	0.37	0.19	0.10	
PFTRDA	0.28 U	0.37	0.28	0.19	
PFTEDA	0.28 U	0.37	0.28	0.19	
PFBS	0.078 J	0.37	0.19	0.034	
PFPEs	0.19 U	0.37	0.19	0.059	
PFHXS	0.077 J	0.37	0.19	0.030	IR2,
PFHPS	0.19 U	0.37	0.19	0.048	
PFOS	0.13 J	0.37	0.19	0.060	
PFNS	0.19 U	0.37	0.19	0.12	
PFDS	0.28 U	0.37	0.28	0.14	
PFDOS	0.19 U	0.37	0.19	0.12	
4:2FTS	0.75 U	1.5	0.75	0.27	
6:2FTS	2.8	1.5	0.75	0.29	
8:2FTS	0.75 U	1.5	0.75	0.077	
PFOSA	0.19 U	0.37	0.19	0.098	
NMeFOSA	0.75 U	1.5	0.75	0.44	
NEtFOSA	0.75 U	1.5	0.75	0.39	
NMeFOSAA	0.19 U	0.37	0.19	0.099	
NEtFOSAA	0.19 U	0.37	0.19	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.95	
NEtFOSE	1.1 U	1.5	1.1	0.98	
HFPO-DA	0.37 U	0.75	0.37	0.16	

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WGN01LF-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23C0239-02RE2
		File ID:	S2023-04-14A (14)
Sampled:	03/24/23 11:10	Prepared:	04/10/23 08:18
		Analyzed:	04/14/23 17:17
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	533.62 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502
		Calibration:	2315014

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.37 U	0.75	0.37	0.12	
PFEESA	0.37 U	0.75	0.37	0.10	
PFMPA	0.37 U	0.75	0.37	0.051	
PFMBA	0.37 U	0.75	0.37	0.085	
NFDHA	0.37 U	0.75	0.37	0.28	
9CL-PF3ONS	0.37 U	0.75	0.37	0.20	
11CL-PF3OUDS	0.37 U	0.75	0.37	0.19	
3:3FTCA	0.75 U	1.5	0.75	0.54	
5:3FTCA	0.75 U	1.5	0.75	0.42	
7:3FTCA	0.75 U	1.5	0.75	0.52	



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (14)
 Acquired: 2023/04/14 - 17:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) 10896 (263.0 / 69.0) N/A	(4.29, 1.00) (0.01, N/A, #Value!)	16.7 N/A	N/A 0.0 0.0	0.0524	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) 4435 (363.0 / 169.0) 3000	(5.77, 1.00) (0.00, N/A, -0.5)	16.7 1273.3	0.6765 221.6 217.3	0.0200	N/A			IR2,
PFOA	(413.0 / 369.0) 10659 (413.0 / 169.0) 2920	(6.38, 1.00) (0.00, N/A, -0.3)	21.3 134.0	0.2740 87.5 87.5	0.0325	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) 3855 (513.0 / 169.0) 180	(7.57, 1.00) (0.01, N/A, -0.8)	16.8 10.8	0.0466 40.7 41.8	0.0128	N/A			IR1,
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (14)
 Acquired: 2023/04/14 - 17:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 12790 (299.0 / 99.0) 10664	(5.06, 1.00) (0.00, N/A, 1.1)	20.4 18.4	0.8338 129.7 125.8	0.0209	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) 14507 (399.0 / 99.0) 7687	(6.47, 1.00) (0.00, N/A, 0.1)	18.1 55.5	0.5298 153.0 153.7	0.0205	N/A			IR2,
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) 27597 (499.0 / 99.0) 7422	(7.72, 1.00) (0.00, N/A, -0.5)	29.8 49.5	0.2690 120.2 116.8	0.0341	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 233046 (427.0 / 81.0) 164183	(6.15, 1.00) (0.00, N/A, -0.1)	269.5 265.9	0.7045 100.0 97.6	0.7495	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (14)
 Acquired: 2023/04/14 - 17:17

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) 9546 (498.0 / 478.0) 925	(9.72, 1.00) (0.00, N/A, 0.3)	59.2 17.1	0.0969 391.2 436.3	0.0084	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (14)
 Acquired: 2023/04/14 - 17:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 110920	(3.41, N/A) (N/A, 0.04, N/A)	657.4	N/A	0.9099 [1.0000]	91.0% { 87.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 294171	(5.11, N/A) (N/A, 0.03, N/A)	1018.2	N/A	1.4504 [1.0000]	145.0% { 147.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 404656	(6.38, N/A) (N/A, 0.00, N/A)	1761.1	N/A	1.2733 [1.0000]	127.3% { 122.2% }			

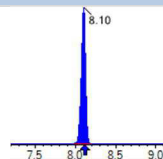
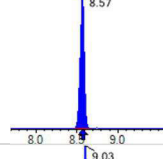
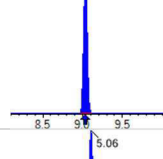
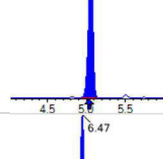
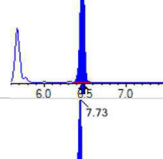
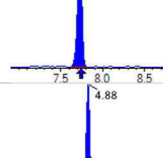
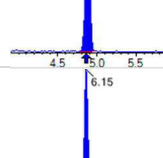
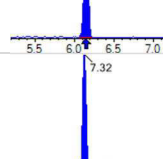
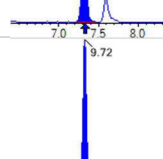
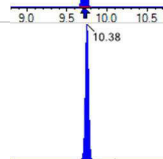
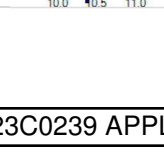


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (14)
 Acquired: 2023/04/14 - 17:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 353087	(6.99, N/A) (N/A, -0.01, N/A)	1699.2	N/A	1.1634 [1.0000]	116.3% { 110.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 315224	(7.56, N/A) (N/A, -0.02, N/A)	1833.8	N/A	0.9715 [1.0000]	97.2% { 95.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 565914	(6.47, N/A) (N/A, 0.00, N/A)	2689.2	N/A	1.2636 [1.0000]	126.4% { 115.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 650546	(7.73, N/A) (N/A, -0.02, N/A)	494.6	N/A	0.9566 [1.0000]	95.7% { 91.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 339147	(3.41, N/A) (N/A, 0.04, N/A)	2841.2	N/A	2.8838 [8.0000]	36.0% { 31.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 865657	(4.28, N/A) (N/A, 0.02, N/A)	2391.8	N/A	2.6271 [4.0000]	65.7% { 100.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 669260	(5.11, N/A) (N/A, 0.03, N/A)	1704.6	N/A	1.6051 [2.0000]	80.3% { 114.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 515402	(5.78, N/A) (N/A, 0.02, N/A)	1765.3	N/A	1.4152 [2.0000]	70.8% { 94.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 696236	(6.38, N/A) (N/A, 0.00, N/A)	3224.6	N/A	1.7432 [2.0000]	87.2% { 105.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 333897	(7.00, N/A) (N/A, 0.00, N/A)	1595.9	N/A	1.0065 [1.0000]	100.7% { 104.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 319807	(7.56, N/A) (N/A, -0.01, N/A)	1253.6	N/A	0.9043 [1.0000]	90.4% { 91.0% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 406821	(8.10, N/A) (N/A, 0.00, N/A)	3168.9	N/A	1.2393 [1.0000]	123.9% { 111.6% }			
13C2_PFDa_EIS	(615.0 / 570.0) 338200	(8.57, N/A) (N/A, 0.00, N/A)	2017.8	N/A	1.2033 [1.0000]	120.3% { 128.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 239921	(9.03, N/A) (N/A, 0.00, N/A)	1813.5	N/A	0.9052 [1.0000]	90.5% { 103.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1715325	(5.06, N/A) (N/A, 0.03, N/A)	853.1	N/A	1.9306 [2.0000]	96.5% { 129.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 900901	(6.47, N/A) (N/A, 0.00, N/A)	425.8	N/A	1.7271 [2.0000]	86.4% { 101.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1431945	(7.73, N/A) (N/A, -0.01, N/A)	661.1	N/A	1.8169 [2.0000]	90.8% { 86.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 660494	(4.88, N/A) (N/A, 0.03, N/A)	587.9	N/A	8.2539 [4.0000]	206.3% { 276.1% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 726797	(6.15, N/A) (N/A, 0.00, N/A)	726.2	N/A	7.9577 [4.0000]	198.9% { 251.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 750516	(7.32, N/A) (N/A, -0.01, N/A)	391.3	N/A	6.2070 [4.0000]	155.2% { 201.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2590500	(9.72, N/A) (N/A, 0.00, N/A)	3476.4	N/A	2.0247 [2.0000]	101.2% { 105.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 371030	(10.38, N/A) (N/A, 0.01, N/A)	1645.2	N/A	1.3590 [2.0000]	67.9% { 59.2% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (14)
 Acquired: 2023/04/14 - 17:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 288683	(10.55 , N/A) (N/A , 0.01 , N/A)	1973.7	N/A	1.2815 [2.0000]	64.1% { 51.6% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 568564	(7.70 , N/A) (N/A , -0.01 , N/A)	2121.5	N/A	3.3658 [4.0000]	84.1% { 87.3% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 697178	(7.96 , N/A) (N/A , -0.01 , N/A)	23702.7	N/A	5.0318 [4.0000]	125.8% { 125.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 721198	(10.31 , N/A) (N/A , 0.01 , N/A)	979.5	N/A	7.9567 [20.0000]	39.8% { 33.2% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1554787	(10.49 , N/A) (N/A , 0.01 , N/A)	1243.8	N/A	12.9783 [20.0000]	64.9% { 53.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1406674	(5.38 , N/A) (N/A , 0.03 , N/A)	1971.8	N/A	5.9801 [8.0000]	74.8% { 116.0% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WGN01LF-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810		
Matrix:	Water	Laboratory ID:	23C0239-02RE3	File ID:	S2023-04-14A (15)
Sampled:	03/24/23 11:10	Prepared:	04/10/23 08:18	Analyzed:	04/14/23 17:30
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	533.62 mL / 2 mL			Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502	Calibration:	2315014



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (15)
 Acquired: 2023/04/14 - 17:30

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



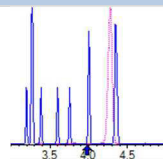
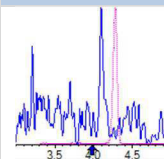
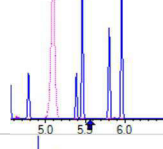
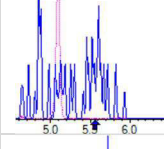
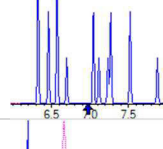
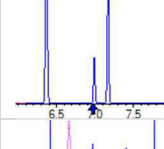
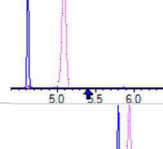
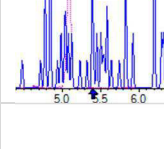
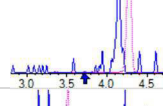
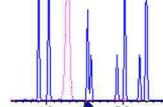
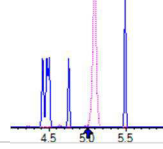
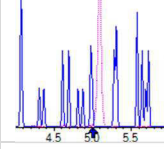
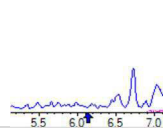
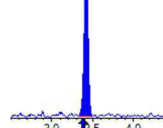
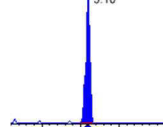
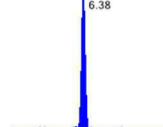
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

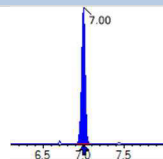
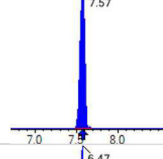
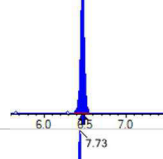
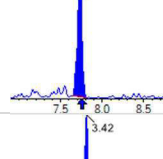
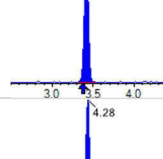
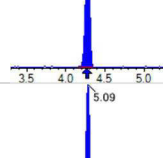
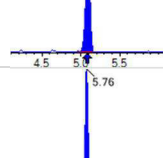
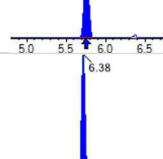
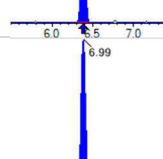
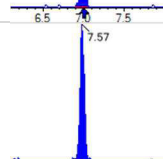
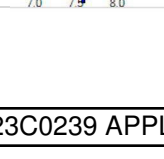
Sample I.D.: 23C0239-02RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-28.dam

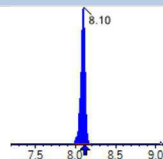
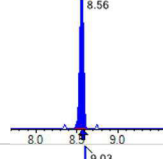
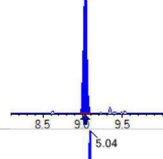
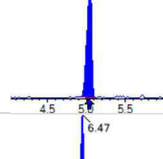
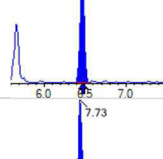
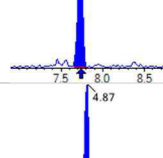
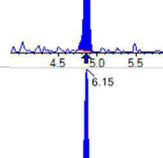
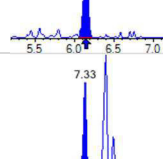
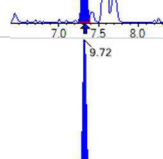
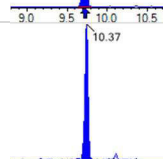
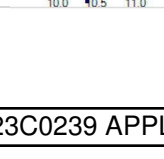
Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (15)
 Acquired: 2023/04/14 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 67384 (427.0 / 81.0) 40113	(6.15, 1.00) (0.00, N/A, -0.1)	98.8 81.5	0.5953 84.5 82.4	0.3653	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 15879	(3.42, N/A) (N/A, 0.05, N/A)	181.7	N/A	1.3025 [1.0000]	130.3% { 12.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 23219	(5.10, N/A) (N/A, 0.01, N/A)	7805.7	N/A	1.1448 [1.0000]	114.5% { 11.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 41919	(6.38, N/A) (N/A, 0.00, N/A)	3313.8	N/A	1.3191 [1.0000]	131.9% { 12.7% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 35778	(7.00, N/A) (N/A, 0.00, N/A)	138734.5	N/A	1.1788 [1.0000]	117.9% { 11.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 40229	(7.57, N/A) (N/A, 0.00, N/A)	325.1	N/A	1.2398 [1.0000]	124.0% { 12.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 55288	(6.47, N/A) (N/A, 0.00, N/A)	11749.5	N/A	1.2345 [1.0000]	123.5% { 11.3% }			
13C4_PFOS_IIS	(503.0 / 79.9) 90241	(7.73, N/A) (N/A, -0.01, N/A)	119.3	N/A	1.3269 [1.0000]	132.7% { 12.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 51010	(3.42, N/A) (N/A, 0.05, N/A)	714.2	N/A	0.3030 [0.8000]	37.9% { 4.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 95159	(4.28, N/A) (N/A, 0.01, N/A)	743.4	N/A	0.3659 [0.4000]	91.5% { 11.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 62063	(5.09, N/A) (N/A, 0.01, N/A)	1332.2	N/A	0.1886 [0.2000]	94.3% { 10.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 54038	(5.76, N/A) (N/A, 0.01, N/A)	298.2	N/A	0.1880 [0.2000]	94.0% { 9.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 77123	(6.38, N/A) (N/A, 0.00, N/A)	4052.8	N/A	0.1864 [0.2000]	93.2% { 11.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 27056	(6.99, N/A) (N/A, 0.00, N/A)	11956.9	N/A	0.0805 [0.1000]	80.5% { 8.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 45657	(7.57, N/A) (N/A, -0.01, N/A)	1843.6	N/A	0.1012 [0.1000]	101.2% { 13.0% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 35366	(8.10, N/A) (N/A, 0.00, N/A)	567.0	N/A	0.0844 [0.1000]	84.4% {9.7%}			
13C2_PFDa_EIS	(615.0 / 570.0) 27299	(8.56, N/A) (N/A, -0.01, N/A)	6214.1	N/A	0.0761 [0.1000]	76.1% {10.4%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 27969	(9.03, N/A) (N/A, 0.00, N/A)	527.5	N/A	0.0827 [0.1000]	82.7% {12.0%}			
13C3_PFBs_EIS	(302.0 / 80.0) 165708	(5.04, N/A) (N/A, 0.01, N/A)	380.6	N/A	0.1909 [0.2000]	95.5% {12.5%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 98073	(6.47, N/A) (N/A, 0.00, N/A)	261.3	N/A	0.1924 [0.2000]	96.2% {11.0%}			
13C8_PFOS_EIS	(507.0 / 80.0) 201722	(7.73, N/A) (N/A, -0.01, N/A)	186.1	N/A	0.1845 [0.2000]	92.3% {12.1%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 37526	(4.87, N/A) (N/A, 0.01, N/A)	123.1	N/A	0.4800 [0.4000]	120.0% {15.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 43115	(6.15, N/A) (N/A, 0.01, N/A)	133.1	N/A	0.4832 [0.4000]	120.8% {14.9%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 48295	(7.33, N/A) (N/A, 0.00, N/A)	65.7	N/A	0.4088 [0.4000]	102.2% {13.0%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 270906	(9.72, N/A) (N/A, 0.00, N/A)	976.5	N/A	0.1526 [0.2000]	76.3% {11.1%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 43155	(10.37, N/A) (N/A, 0.00, N/A)	367.5	N/A	0.1140 [0.2000]	57.0% {6.9%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-02RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (15)
 Acquired: 2023/04/14 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 29861	(10.55 , N/A) (N/A , 0.00 , N/A)	364.0	N/A	0.0956 [0.2000]	47.8% { 5.3% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 94969	(7.71 , N/A) (N/A , -0.01 , N/A)	1313.4	N/A	0.4053 [0.4000]	101.3% { 14.6% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 48197	(7.96 , N/A) (N/A , 0.00 , N/A)	2659.4	N/A	0.2508 [0.4000]	62.7% { 8.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 121931	(10.30 , N/A) (N/A , 0.00 , N/A)	349.2	N/A	0.9698 [2.0000]	48.5% { 5.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 144001	(10.48 , N/A) (N/A , 0.00 , N/A)	327.9	N/A	0.8665 [2.0000]	43.3% { 4.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 137994	(5.36 , N/A) (N/A , 0.01 , N/A)	615.2	N/A	0.7433 [0.8000]	92.9% { 11.4% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WQFB01-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23C0239-03RE2
		File ID:	S2023-04-14A (16)
Sampled:	03/24/23 10:00	Prepared:	04/10/23 08:18
		Analyzed:	04/14/23 17:43
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	581.54 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502
		Calibration:	2315014

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.69 U	1.4	0.69	0.18	
PFPEA	0.14 J	0.69	0.34	0.056	
PFHXA	0.17 U	0.34	0.17	0.047	
PFHPA	0.13 J	0.34	0.17	0.035	
PFOA	0.26 U	0.34	0.26	0.13	IR1,
PFNA	0.17 U	0.34	0.17	0.070	
PFDA	0.17 U	0.34	0.17	0.087	IR2,
PFUnA	0.26 U	0.34	0.26	0.14	
PFDOA	0.17 U	0.34	0.17	0.096	
PFTRDA	0.26 U	0.34	0.26	0.18	
PFTEDA	0.26 U	0.34	0.26	0.17	
PFBS	0.17 U	0.34	0.17	0.032	
PFPEs	0.17 U	0.34	0.17	0.054	
PFHXS	0.17 U	0.34	0.17	0.027	IR2,
PFHPS	0.17 U	0.34	0.17	0.044	
PFOS	0.088 J	0.34	0.17	0.055	IR2,
PFNS	0.17 U	0.34	0.17	0.11	
PFDS	0.26 U	0.34	0.26	0.13	
PFDOS	0.17 U	0.34	0.17	0.11	
4:2FTS	0.69 U	1.4	0.69	0.25	
6:2FTS	0.69 U	1.4	0.69	0.27	
8:2FTS	0.69 U	1.4	0.69	0.071	
PFOSA	0.17 U	0.34	0.17	0.090	
NMeFOSA	0.69 U	1.4	0.69	0.41	
NEtFOSA	0.69 U	1.4	0.69	0.35	
NMeFOSAA	0.17 U	0.34	0.17	0.091	
NEtFOSAA	0.17 U	0.34	0.17	0.099	
NMeFOSE	1.0 U	1.4	1.0	0.87	
NEtFOSE	1.0 U	1.4	1.0	0.90	
HFPO-DA	0.34 U	0.69	0.34	0.15	

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WQFB01-2303W3

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23C0239-03RE2
		File ID:	S2023-04-14A (16)
Sampled:	03/24/23 10:00	Prepared:	04/10/23 08:18
		Analyzed:	04/14/23 17:43
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	581.54 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0119	Sequence:	SC01502
		Calibration:	2315014

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-03RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (16)
 Acquired: 2023/04/14 - 17:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) 10262 (263.0 / 69.0) N/A	(4.32, 1.00) (0.01, N/A, #Value!)	22.1 N/A	N/A 0.0 0.0	0.0413	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) 10761 (363.0 / 169.0) 3189	(5.77, 1.00) (0.00, N/A, -0.7)	49.3 744.8	0.2964 97.1 95.2	0.0379	N/A			
PFOA	(413.0 / 369.0) 7997 (413.0 / 169.0) N/A	(6.40, 1.00) (0.01, N/A, #Value!)	25.5 N/A	N/A 0.0 0.0	0.0222	N/A			IR1,
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) 3070 (513.0 / 169.0) 540	(7.57, 1.00) (0.00, N/A, -0.5)	22.4 144.9	0.1759 153.5 157.7	0.0081	N/A			IR2,
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



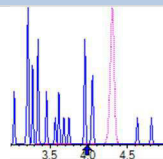
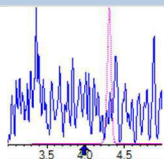
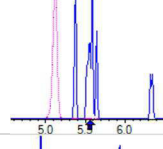
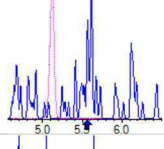
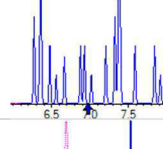
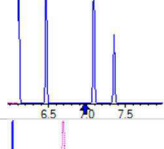
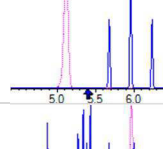
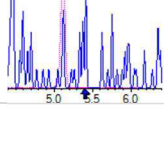
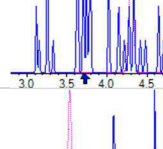
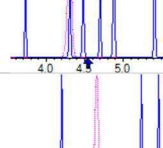
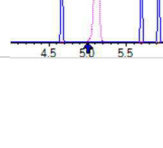
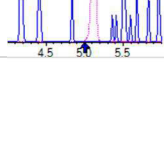
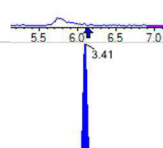
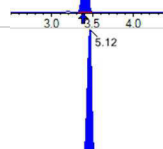
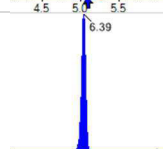
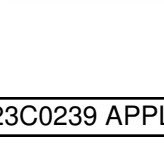
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-03RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (16)
 Acquired: 2023/04/14 - 17:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) 2336 (399.0 / 99.0) 2684	(6.45, 1.00) (-0.01, N/A, -1.5)	11529.2 171.0	1.1491 331.8 333.3	0.0028	N/A			IR2,
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) 26778 (499.0 / 99.0) 10271	(7.74, 1.00) (0.00, N/A, 0.3)	41.3 338.9	0.3836 171.4 166.6	0.0255	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	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 10536 (498.0 / 478.0) 634	(9.72 , 1.00) (0.00 , N/A , -0.6)	57.6 13.1	0.0601 242.9 270.9	0.0094	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 165425	(3.41, N/A) (N/A, 0.04, N/A)	1471.9	N/A	1.3570 [1.0000]	135.7% { 131.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 258934	(5.12, N/A) (N/A, 0.03, N/A)	1274.0	N/A	1.2767 [1.0000]	127.7% { 129.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 403987	(6.39, N/A) (N/A, 0.01, N/A)	9663.5	N/A	1.2712 [1.0000]	127.1% { 122.0% }			

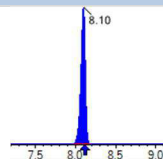
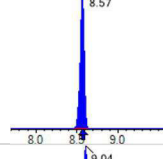
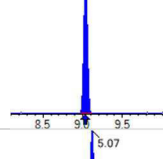
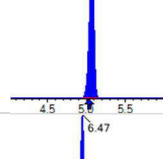
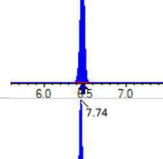
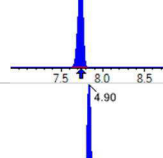
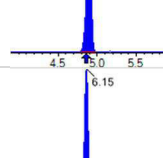
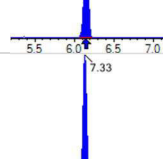
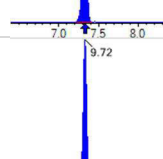
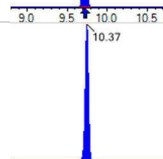
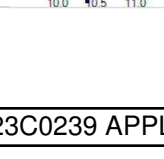


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-03RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (16)
 Acquired: 2023/04/14 - 17:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 388292	(7.00, N/A) (N/A, 0.00, N/A)	10969.8	N/A	1.2794 [1.0000]	127.9% { 121.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 383916	(7.57, N/A) (N/A, -0.01, N/A)	3511.6	N/A	1.1832 [1.0000]	118.3% { 116.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 643594	(6.47, N/A) (N/A, 0.00, N/A)	3376.1	N/A	1.4371 [1.0000]	143.7% { 131.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 860489	(7.73, N/A) (N/A, -0.01, N/A)	1920.2	N/A	1.2653 [1.0000]	126.5% { 121.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1359307	(3.41, N/A) (N/A, 0.04, N/A)	5737.6	N/A	7.7501 [8.0000]	96.9% { 125.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1033108	(4.31, N/A) (N/A, 0.04, N/A)	2386.8	N/A	3.5620 [4.0000]	89.0% { 120.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 667816	(5.12, N/A) (N/A, 0.03, N/A)	2886.9	N/A	1.8196 [2.0000]	91.0% { 113.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 658324	(5.77, N/A) (N/A, 0.01, N/A)	2717.8	N/A	2.0536 [2.0000]	102.7% { 120.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 764349	(6.39, N/A) (N/A, 0.01, N/A)	2477.8	N/A	1.9169 [2.0000]	95.8% { 115.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 350723	(7.00, N/A) (N/A, 0.00, N/A)	6274.0	N/A	0.9614 [1.0000]	96.1% { 109.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 402586	(7.57, N/A) (N/A, -0.01, N/A)	8886.2	N/A	0.9347 [1.0000]	93.5% { 114.6% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 366411	(8.10, N/A) (N/A, 0.00, N/A)	17132.4	N/A	0.9165 [1.0000]	91.6% { 100.5% }			
13C2_PFDa_EIS	(615.0 / 570.0) 337918	(8.57, N/A) (N/A, 0.00, N/A)	58338.4	N/A	0.9871 [1.0000]	98.7% { 128.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 280188	(9.04, N/A) (N/A, 0.01, N/A)	1351.7	N/A	0.8680 [1.0000]	86.8% { 120.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1811359	(5.07, N/A) (N/A, 0.04, N/A)	3057.8	N/A	1.7927 [2.0000]	89.6% { 137.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1064191	(6.47, N/A) (N/A, 0.00, N/A)	3308.1	N/A	1.7939 [2.0000]	89.7% { 119.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1857758	(7.74, N/A) (N/A, -0.01, N/A)	2387.5	N/A	1.7820 [2.0000]	89.1% { 111.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 337043	(4.90, N/A) (N/A, 0.04, N/A)	1104.6	N/A	3.7035 [4.0000]	92.6% { 140.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 397858	(6.15, N/A) (N/A, 0.01, N/A)	1308.4	N/A	3.8304 [4.0000]	95.8% { 137.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 426000	(7.33, N/A) (N/A, 0.00, N/A)	1026.3	N/A	3.0979 [4.0000]	77.4% { 114.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2565566	(9.72, N/A) (N/A, 0.00, N/A)	5028.3	N/A	1.5160 [2.0000]	75.8% { 104.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 253989	(10.37, N/A) (N/A, 0.01, N/A)	1287.2	N/A	0.7033 [2.0000]	35.2% { 40.5% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0239-03RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (16)
 Acquired: 2023/04/14 - 17:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 195936	(10.55 , N/A) (N/A , 0.01 , N/A)	1593.5	N/A	0.6576 [2.0000]	32.9% { 35.0% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 723575	(7.70 , N/A) (N/A , -0.01 , N/A)	1685.6	N/A	3.2384 [4.0000]	81.0% { 111.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 591564	(7.96 , N/A) (N/A , -0.01 , N/A)	5236.5	N/A	3.2279 [4.0000]	80.7% { 106.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1291970	(10.31 , N/A) (N/A , 0.01 , N/A)	1413.2	N/A	10.7761 [20.0000]	53.9% { 59.4% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1842052	(10.49 , N/A) (N/A , 0.01 , N/A)	1314.1	N/A	11.6247 [20.0000]	58.1% { 62.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1488463	(5.37 , N/A) (N/A , 0.02 , N/A)	2172.7	N/A	7.1890 [8.0000]	89.9% { 122.7% }			

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17-WGN01LF-2303W3 (23C0239-01RE2) ng/L		Lab File ID: S2023-04-14A (12)		Analyzed: 04/14/23 16:51
13C4-PFBA	28.5	80.5	10 - 130	
13C5-PFPEA	14.3	81.6	35 - 150	
13C5-PFHXA	7.13	89.4	55 - 150	
13C4-PFHPA	7.13	97.3	55 - 150	
13C8-PFOA	7.13	90.5	60 - 140	
13C9-PFNA	3.57	91.1	55 - 140	
13C6-PFDA	3.57	89.0	50 - 140	
13C7-PFUnA	3.57	80.1	30 - 140	
13C2-PFDOA	3.57	59.0	10 - 150	
13C2-PFTEDA	3.57	40.0	10 - 130	
13C3-PFBS	7.13	86.9	55 - 150	
13C3-PFHXS	7.13	95.9	55 - 150	
13C8-PFOS	7.13	88.6	45 - 140	
13C2-4:2FTS	14.3	114	60 - 200	
13C2-6:2FTS	14.3	111	60 - 200	
13C2-8:2FTS	14.3	75.8	50 - 200	
13C8-PFOSA	7.13	72.4	30 - 130	
D3-NMEFOSA	7.13	51.7	15 - 130	
D5-NETFOSA	7.13	56.0	10 - 130	
D3-NMEFOSAA	14.3	82.9	45 - 200	
D5-NETFOSAA	14.3	82.6	10 - 200	
D7-NMEFOSE	71.3	36.8	10 - 150	
D9-NETFOSSE	71.3	68.0	10 - 150	
13C3-HFPO-DA	28.5	83.8	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17D-WGN01LF-2303W3 (23C0239-02RE2) ng/		Lab File ID: S2023-04-14A (14)		Analyzed: 04/14/23 17:17
13C4-PFBA	30.0	36.0	10 - 130	
13C5-PFPEA	15.0	65.7	35 - 150	
13C5-PFHXA	7.50	80.3	55 - 150	
13C4-PFHPA	7.50	70.8	55 - 150	
13C8-PFOA	7.50	87.2	60 - 140	
13C9-PFNA	3.75	101	55 - 140	
13C6-PFDA	3.75	90.4	50 - 140	
13C7-PFUnA	3.75	124	30 - 140	
13C2-PFDOA	3.75	120	10 - 150	
13C2-PFTEDA	3.75	90.5	10 - 130	
13C3-PFBS	7.50	96.5	55 - 150	
13C3-PFHXS	7.50	86.4	55 - 150	
13C8-PFOS	7.50	90.8	45 - 140	
13C2-4:2FTS	15.0	206	60 - 200	*
13C2-6:2FTS	15.0	199	60 - 200	
13C2-8:2FTS	15.0	155	50 - 200	
13C8-PFOSA	7.50	101	30 - 130	
D3-NMEFOSA	7.50	67.9	15 - 130	
D5-NETFOSA	7.50	64.1	10 - 130	
D3-NMEFOSAA	15.0	84.1	45 - 200	
D5-NETFOSAA	15.0	126	10 - 200	
D7-NMEFOSE	75.0	39.8	10 - 150	
D9-NETFOSSE	75.0	64.9	10 - 150	
13C3-HFPO-DA	30.0	74.8	25 - 160	
AF-RHMW17D-WGN01LF-2303W3 (23C0239-02RE3) ng/		Lab File ID: S2023-04-14A (15)		Analyzed: 04/14/23 17:30
13C2-4:2FTS	15.0	120	60 - 200	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17D-WQFB01-2303W3 (23C0239-03RE2) ng/L		Lab File ID: S2023-04-14A (16)		Analyzed: 04/14/23 17:43
13C4-PFBA	27.5	96.9	10 - 130	
13C5-PFPEA	13.8	89.0	35 - 150	
13C5-PFHXA	6.88	91.0	55 - 150	
13C4-PFHPA	6.88	103	55 - 150	
13C8-PFOA	6.88	95.8	60 - 140	
13C9-PFNA	3.44	96.1	55 - 140	
13C6-PFDA	3.44	93.5	50 - 140	
13C7-PFUnA	3.44	91.6	30 - 140	
13C2-PFDOA	3.44	98.7	10 - 150	
13C2-PFTEDA	3.44	86.8	10 - 130	
13C3-PFBS	6.88	89.6	55 - 150	
13C3-PFHXS	6.88	89.7	55 - 150	
13C8-PFOS	6.88	89.1	45 - 140	
13C2-4:2FTS	13.8	92.6	60 - 200	
13C2-6:2FTS	13.8	95.8	60 - 200	
13C2-8:2FTS	13.8	77.4	50 - 200	
13C8-PFOSA	6.88	75.8	30 - 130	
D3-NMEFOSA	6.88	35.2	15 - 130	
D5-NETFOSA	6.88	32.9	10 - 130	
D3-NMEFOSAA	13.8	81.0	45 - 200	
D5-NETFOSAA	13.8	80.7	10 - 200	
D7-NMEFOSE	68.8	53.9	10 - 150	
D9-NETFOSSE	68.8	58.1	10 - 150	
13C3-HFPO-DA	27.5	89.9	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BCD0119-BLK1) . ng/L				
	Lab File ID: S2023-04-14A (7)			Analyzed: 04/14/23 15:47
13C4-PFBA	32.0	89.3	10 - 130	
13C5-PFPEA	16.0	88.4	35 - 150	
13C5-PFHXA	8.00	88.5	55 - 150	
13C4-PFHPA	8.00	96.5	55 - 150	
13C8-PFOA	8.00	89.2	60 - 140	
13C9-PFNA	4.00	84.9	55 - 140	
13C6-PFDA	4.00	76.6	50 - 140	
13C7-PFUnA	4.00	83.1	30 - 140	
13C2-PFDOA	4.00	80.2	10 - 150	
13C2-PFTEDA	4.00	65.7	10 - 130	
13C3-PFBS	8.00	76.8	55 - 150	
13C3-PFHXS	8.00	85.4	55 - 150	
13C8-PFOS	8.00	81.9	45 - 140	
13C2-4:2FTS	16.0	84.6	60 - 200	
13C2-6:2FTS	16.0	86.9	60 - 200	
13C2-8:2FTS	16.0	71.1	50 - 200	
13C8-PFOSA	8.00	67.4	30 - 130	
D3-NMEFOSA	8.00	26.1	15 - 130	
D5-NETFOSA	8.00	22.3	10 - 130	
D3-NMEFOSAA	16.0	69.8	45 - 200	
D5-NETFOSAA	16.0	65.9	10 - 200	
D7-NMEFOSE	80.0	46.3	10 - 150	
D9-NETFOSE	80.0	51.7	10 - 150	
13C3-HFPO-DA	32.0	80.5	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BCD0119-BS1) . ng/L	Lab File ID: S2023-04-14A (8)			Analyzed: 04/14/23 16:00
13C4-PFBA	32.0	97.0	10 - 130	
13C5-PFPEA	16.0	98.8	35 - 150	
13C5-PFHXA	8.00	97.4	55 - 150	
13C4-PFHPA	8.00	105	55 - 150	
13C8-PFOA	8.00	99.8	60 - 140	
13C9-PFNA	4.00	97.1	55 - 140	
13C6-PFDA	4.00	98.4	50 - 140	
13C7-PFUnA	4.00	109	30 - 140	
13C2-PFDOA	4.00	97.8	10 - 150	
13C2-PFTEDA	4.00	83.2	10 - 130	
13C3-PFBS	8.00	90.2	55 - 150	
13C3-PFHXS	8.00	95.1	55 - 150	
13C8-PFOS	8.00	88.9	45 - 140	
13C2-4:2FTS	16.0	94.3	60 - 200	
13C2-6:2FTS	16.0	98.5	60 - 200	
13C2-8:2FTS	16.0	93.3	50 - 200	
13C8-PFOSA	8.00	71.4	30 - 130	
D3-NMEFOSA	8.00	36.7	15 - 130	
D5-NETFOSA	8.00	38.8	10 - 130	
D3-NMEFOSAA	16.0	76.3	45 - 200	
D5-NETFOSAA	16.0	72.3	10 - 200	
D7-NMEFOSE	80.0	44.3	10 - 150	
D9-NETFOSE	80.0	79.0	10 - 150	
13C3-HFPO-DA	32.0	90.8	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BCD0119-MRL1) . ng/L	Lab File ID: S2023-04-14A (9)			Analyzed: 04/14/23 16:12
13C4-PFBA	32.0	99.2	10 - 130	
13C5-PFPEA	16.0	98.7	35 - 150	
13C5-PFHXA	8.00	98.7	55 - 150	
13C4-PFHPA	8.00	102	55 - 150	
13C8-PFOA	8.00	94.0	60 - 140	
13C9-PFNA	4.00	86.5	55 - 140	
13C6-PFDA	4.00	90.4	50 - 140	
13C7-PFUnA	4.00	97.5	30 - 140	
13C2-PFDOA	4.00	97.3	10 - 150	
13C2-PFTEDA	4.00	89.4	10 - 130	
13C3-PFBS	8.00	81.5	55 - 150	
13C3-PFHXS	8.00	95.5	55 - 150	
13C8-PFOS	8.00	88.5	45 - 140	
13C2-4:2FTS	16.0	94.9	60 - 200	
13C2-6:2FTS	16.0	99.6	60 - 200	
13C2-8:2FTS	16.0	83.1	50 - 200	
13C8-PFOSA	8.00	72.8	30 - 130	
D3-NMEFOSA	8.00	33.8	15 - 130	
D5-NETFOSA	8.00	34.9	10 - 130	
D3-NMEFOSAA	16.0	81.3	45 - 200	
D5-NETFOSAA	16.0	75.4	10 - 200	
D7-NMEFOSE	80.0	63.8	10 - 150	
D9-NETFOSSE	80.0	74.1	10 - 150	
13C3-HFPO-DA	32.0	94.9	25 - 160	

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-BLK1
Sampled:		Prepared:	04/10/23 08:18
Solids:		Preparation:	EPA 1633
Batch:	BCD0119	Sequence:	SC01502
Column:	1	Calibration:	2315014
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.30 U	0.40	0.30	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.30 U	0.40	0.30	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.30 U	0.40	0.30	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.166 J	0.40	0.20	0.064	MI2, J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.30 U	0.40	0.30	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-BLK1
Sampled:		File ID:	S2023-04-14A (7)
Solids:		Prepared:	04/10/23 08:18
Batch:	BCD0119	Analyzed:	04/14/23 15:47
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2315014
		Instrument:	Saphira
		Sequence:	SC01502

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

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0239

Client: AECOM

Project: Red Hill AFFF Assessment Sampling / 60697810

Matrix: Water

Preparation: EPA 1633

Batch: BCD0119

Laboratory ID: BCD0119-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
PFBA	16.0	16.2	101	58 - 148
PFPEA	8.00	7.80	97.5	54 - 152
PFHXA	4.00	4.00	99.9	55 - 152
PFHPA	4.00	4.25	106	54 - 154
PFOA	4.00	4.07	102	52 - 161
PFNA	4.00	4.03	101	59 - 149
PFDA	4.00	3.70	92.6	52 - 147
PFUnA	4.00	3.66	91.5	48 - 159
PFDOA	4.00	4.35	109	64 - 142
PFTRDA	4.00	3.99	99.8	49 - 148
PFTEDA	4.00	4.44	111	47 - 161
PFBS	3.54	3.43	96.8	62 - 144
PFPEs	3.76	3.83	102	59 - 151
PFHXS	3.66	3.64	99.5	57 - 146
PFHPS	3.82	4.01	105	55 - 152
PFOS	3.72	3.74	100	58 - 149
PFNS	3.84	3.55	92.5	52 - 148
PFDS	3.86	3.21	83.2	51 - 147
PFDOS	3.88	3.19	82.1	36 - 145
4:2FTS	15.0	14.4	96.1	67 - 146
6:2FTS	15.2	17.2	113	61 - 151
8:2FTS	15.4	14.9	97.0	63 - 152
PFOSA	4.00	4.73	118	61 - 148
NMeFOSA	16.0	15.6	97.7	63 - 145
NEtFOSA	16.0	15.4	96.6	65 - 139
NMeFOSAA	4.00	3.67	91.8	58 - 144
NEtFOSAA	4.00	3.58	89.5	59 - 146
NMeFOSE	16.0	17.2	107	71 - 136
NEtFOSE	16.0	15.7	97.9	69 - 137
HFPO-DA	8.00	7.95	99.4	63 - 144
ADONA	7.56	8.44	112	68 - 146
PFEESA	7.12	6.95	97.6	56 - 151
PFMPA	8.00	8.79	110	51 - 145
PFMBA	8.00	7.79	97.3	55 - 148

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0239

Client: AECOM

Project: Red Hill AFFF Assessment Sampling / 60697810

Matrix: Water

Preparation: EPA 1633

Batch: BCD0119

Laboratory ID: BCD0119-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
NFDHA	8.00	7.68	96.0	48 - 161
9CL-PF3ONS	7.48	7.99	107	56 - 156
11CL-PF3OUDS	7.56	7.13	94.3	46 - 156
3:3FTCA	16.0	16.1	100	62 - 129
5:3FTCA	16.0	14.8	92.7	63 - 134
7:3FTCA	16.0	15.5	97.0	50 - 138

CALIBRATION SUMMARY

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(213.0 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.43686 x (std. dev. = 0.00909) (weighting: None)	%RSE=2.1
PFPeA	(263.0 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.47635 x (std. dev. = 0.02526) (weighting: None)	%RSE=5.3
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.44601 x (std. dev. = 0.01103) (weighting: None)	%RSE=2.5
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.45028 x (std. dev. = 0.01209) (weighting: None)	%RSE=2.7
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.47637 x (std. dev. = 0.02861) (weighting: None)	%RSE=6.0
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.88105 x (std. dev. = 0.05597) (weighting: None)	%RSE=6.4
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 0.94807 x (std. dev. = 0.06923) (weighting: None)	%RSE=7.3
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.80292 x (std. dev. = 0.04853) (weighting: None)	%RSE=6.0
PFDaA	(613.0 / 569.0)	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.83711 x (std. dev. = 0.04669) (weighting: None)	%RSE=5.6
PFTrDA	(663.0 / 619.0)	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.74583 x (std. dev. = 0.06481) (weighting: None)	%RSE=8.7
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.86075 x (std. dev. = 0.03724) (weighting: None)	%RSE=4.3
PFBS	(299.0 / 80.0)	13C3_PFBs_EIS	1.0000	0.8847	y = 0.29211 x (std. dev. = 0.00608) (weighting: None)	%RSE=2.1
PFPeS	(349.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.81068 x (std. dev. = 0.04203) (weighting: None)	%RSE=5.2
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.72923 x (std. dev. = 0.02044) (weighting: None)	%RSE=2.8
PFHpS	(449.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9514	y = 0.42583 x (std. dev. = 0.02138) (weighting: None)	%RSE=5.0
PFOS	(499.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9275	y = 0.51823 x (std. dev. = 0.01313) (weighting: None)	%RSE=2.5
PFNS	(549.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9599	y = 0.54035 x (std. dev. = 0.02620) (weighting: None)	%RSE=4.8
PFDS	(599.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9631	y = 0.60770 x (std. dev. = 0.03468) (weighting: None)	%RSE=5.7
PFDoS	(699.0 / 80.0)	13C8_PFOs_EIS	1.0000	0.9696	y = 0.50538 x (std. dev. = 0.02533) (weighting: None)	%RSE=5.0
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.82868 x (std. dev. = 0.20737) (weighting: None)	%RSE=7.3
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.39395 x (std. dev. = 0.07109) (weighting: None)	%RSE=5.1
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.37301 x (std. dev. = 0.11032) (weighting: None)	%RSE=8.0
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.41602 x (std. dev. = 0.02618) (weighting: None)	%RSE=6.3
NMeFOSA	(512.0 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.70065 x (std. dev. = 0.20327) (weighting: None)	%RSE=12.0
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 2.09929 x (std. dev. = 0.05348) (weighting: None)	%RSE=2.5
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.21941 x (std. dev. = 0.02363) (weighting: None)	%RSE=10.8
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.23613 x (std. dev. = 0.03823) (weighting: None)	%RSE=16.2
NMeFOSE	(616.0 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.21836 x (std. dev. = 0.00561) (weighting: None)	%RSE=2.6
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.20179 x (std. dev. = 0.00821) (weighting: None)	%RSE=4.1
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.21118 x (std. dev. = 0.01643) (weighting: None)	%RSE=7.8
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.76938 x (std. dev. = 0.06398) (weighting: None)	%RSE=8.3
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 2.07483 x (std. dev. = 0.25907) (weighting: None)	%RSE=12.5
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.34695 x (std. dev. = 0.14453) (weighting: None)	%RSE=10.7
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.02599 x (std. dev. = 0.00254) (weighting: None)	%RSE=9.8
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.31322 x (std. dev. = 0.02640) (weighting: None)	%RSE=8.4
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.49960 x (std. dev. = 0.04686) (weighting: None)	%RSE=9.4
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.96326 x (std. dev. = 0.05749) (weighting: None)	%RSE=6.0
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.11067 x (std. dev. = 0.00686) (weighting: None)	%RSE=6.2
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.37186 x (std. dev. = 0.01956) (weighting: None)	%RSE=5.3
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.53125 x (std. dev. = 0.02588) (weighting: None)	%RSE=4.9
TDCA	(499.0 / 80.0)	13C8_PFOs_EIS	1.0000	1.0000	y = 0.52097 x (std. dev. = 0.03341) (weighting: None)	%RSE=6.4
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 194309.4566 x	%RSD=14.7
13C2_PFHxA_IIS	(315.0 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 268611.0739 x	%RSD=7.5
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 449732.8927 x	%RSD=8.5
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 402245.3321 x	%RSD=9.7
13C2_PFDA_IIS	(515.0 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 404897.0955 x	%RSD=7.2
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 642600.1384 x	%RSD=6.7

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFOS_IIS	(503.0 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 789840.3208 x	%RSD=6.7
13C4_PFBA_EIS	(217.0 / 172.0)	13C3_PFBA_IIS	8.0000	1.0000	y = 8.3567 x	%RSD=4.2
13C5_PFPeA_EIS	(268.0 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 4.7044 x	%RSD=5.1
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.8604 x	%RSD=5.9
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.3783 x	%RSD=4.0
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 1.8304 x	%RSD=4.2
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 0.9155 x	%RSD=4.6
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0757 x	%RSD=5.1
13C7_PFUa_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1204 x	%RSD=7.6
13C2_PFDa_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0584 x	%RSD=6.4
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0395 x	%RSD=10.0
13C3_PFBS_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.9523 x	%RSD=6.4
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.6743 x	%RSD=3.3
13C8_PFOS_EIS	(507.0 / 80.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 2.3642 x	%RSD=3.9
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5986 x	%RSD=6.7
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.6958 x	%RSD=3.2
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.7849 x	%RSD=5.4
13C8_PFOA_EIS	(506.0 / 78.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 4.3488 x	%RSD=5.8
D3_NMeFOSA_EIS	(515.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.9646 x	%RSD=9.3
D5_NEtFOSA_EIS	(531.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.8358 x	%RSD=3.4
D3_MeFOSAA_EIS	(573.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0671 x	%RSD=4.4
D5_EtFOSAA_EIS	(589.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 0.8466 x	%RSD=6.7
D7_NMeFOSE_EIS	(623.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 2.9687 x	%RSD=3.8
D9_NEtFOSE_EIS	(639.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 3.9143 x	%RSD=8.0
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 5.4587 x	%RSD=6.1

x= Concentration Analyte

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

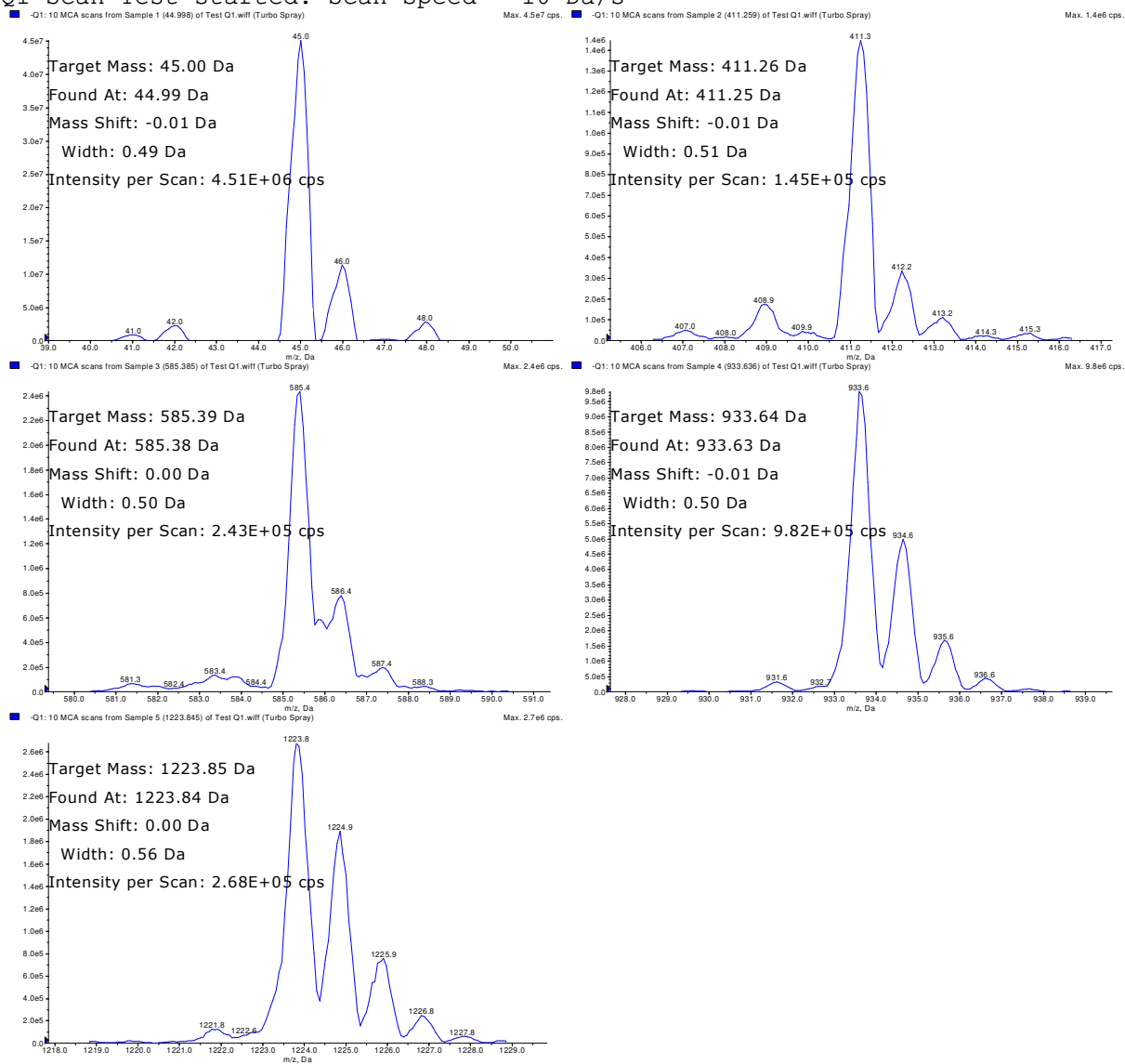
$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

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

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

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

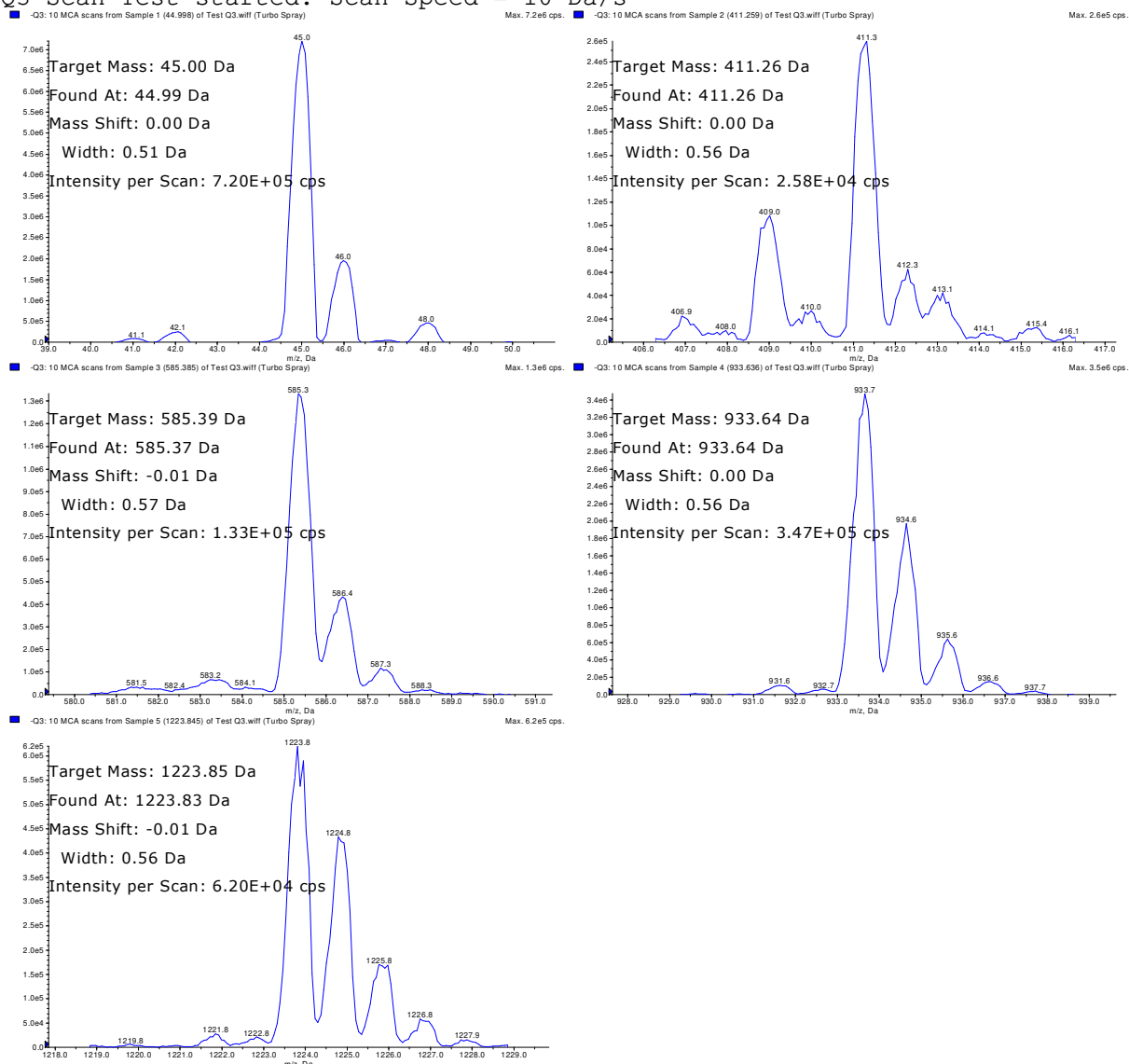
Q1 Scan Test started. Scan Speed = 10 Da/s



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

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

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



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

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(213.0 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.43691 x (std. dev. = 0.01299) (weighting: None)	%RSE=3.0
PFPeA	(263.0 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.48050 x (std. dev. = 0.04189) (weighting: None)	%RSE=8.7
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.48233 x (std. dev. = 0.04735) (weighting: None)	%RSE=9.8
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.43100 x (std. dev. = 0.01330) (weighting: None)	%RSE=3.1
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.47144 x (std. dev. = 0.01483) (weighting: None)	%RSE=3.1
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.92238 x (std. dev. = 0.06691) (weighting: None)	%RSE=7.3
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 0.93994 x (std. dev. = 0.04139) (weighting: None)	%RSE=4.4
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.87986 x (std. dev. = 0.06286) (weighting: None)	%RSE=7.1
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.90697 x (std. dev. = 0.10285) (weighting: None)	%RSE=11.3
PFTeDA	(663.0 / 619.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.82635 x (std. dev. = 0.11138) (weighting: None)	%RSE=13.5
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.91649 x (std. dev. = 0.07187) (weighting: None)	%RSE=7.8
PFBS	(299.0 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.31553 x (std. dev. = 0.01410) (weighting: None)	%RSE=4.5
PFPeS	(349.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.86571 x (std. dev. = 0.05930) (weighting: None)	%RSE=6.8
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.71613 x (std. dev. = 0.02797) (weighting: None)	%RSE=3.9
PFHpS	(449.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9514	y = 0.38359 x (std. dev. = 0.01481) (weighting: None)	%RSE=3.9
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.52480 x (std. dev. = 0.02350) (weighting: None)	%RSE=4.5
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.50756 x (std. dev. = 0.01735) (weighting: None)	%RSE=3.4
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.57570 x (std. dev. = 0.03324) (weighting: None)	%RSE=5.8
PFDoS	(699.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.44582 x (std. dev. = 0.02632) (weighting: None)	%RSE=5.9
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.77506 x (std. dev. = 0.18390) (weighting: None)	%RSE=6.6
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.62410 x (std. dev. = 0.12394) (weighting: None)	%RSE=7.6
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.35204 x (std. dev. = 0.16012) (weighting: None)	%RSE=11.8
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.43809 x (std. dev. = 0.03161) (weighting: None)	%RSE=7.2
NMeFOSA	(512.0 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.65948 x (std. dev. = 0.18905) (weighting: None)	%RSE=11.4
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 2.10109 x (std. dev. = 0.08353) (weighting: None)	%RSE=4.0
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.21250 x (std. dev. = 0.02042) (weighting: None)	%RSE=9.6
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22115 x (std. dev. = 0.01480) (weighting: None)	%RSE=6.7
NMeFOSE	(616.0 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.21835 x (std. dev. = 0.00826) (weighting: None)	%RSE=3.8
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.19696 x (std. dev. = 0.00566) (weighting: None)	%RSE=2.9
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.21113 x (std. dev. = 0.01087) (weighting: None)	%RSE=5.1
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.71112 x (std. dev. = 0.05507) (weighting: None)	%RSE=7.7
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 2.11952 x (std. dev. = 0.15858) (weighting: None)	%RSE=7.5
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.26621 x (std. dev. = 0.09245) (weighting: None)	%RSE=7.3
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.03521 x (std. dev. = 0.00270) (weighting: None)	%RSE=7.7
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.30323 x (std. dev. = 0.03529) (weighting: None)	%RSE=11.6
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.53101 x (std. dev. = 0.04389) (weighting: None)	%RSE=8.3
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 1.08296 x (std. dev. = 0.10921) (weighting: None)	%RSE=10.1
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.10232 x (std. dev. = 0.00542) (weighting: None)	%RSE=5.3
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.37466 x (std. dev. = 0.01726) (weighting: None)	%RSE=4.6
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.49308 x (std. dev. = 0.05432) (weighting: None)	%RSE=11.0
TDCA	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	1.0000	y = 0.48700 x (std. dev. = 0.05274) (weighting: None)	%RSE=10.8
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 121908.6832 x	%RSD=11.8
13C2_PFHxA_IIS	(315.0 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 202823.2734 x	%RSD=6.9
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 317791.4785 x	%RSD=7.1
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 303499.3685 x	%RSD=3.9
13C2_PFDA_IIS	(515.0 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 324469.4448 x	%RSD=7.7
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 447856.5431 x	%RSD=5.4

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFOS_IIS	(503.0 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 680071.7374 x	%RSD=5.9
13C4_PFBA_EIS	(217.0 / 172.0)	13C3_PFBA_IIS	8.0000	1.0000	y = 8.4820 x	%RSD=3.9
13C5_PFPeA_EIS	(268.0 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 4.4805 x	%RSD=6.7
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.8348 x	%RSD=5.9
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.4761 x	%RSD=6.3
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 1.9740 x	%RSD=5.4
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 0.9395 x	%RSD=7.3
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1218 x	%RSD=7.6
13C7_PFUhA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0414 x	%RSD=9.2
13C2_PFDaA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 0.8916 x	%RSD=7.2
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 0.8408 x	%RSD=11.2
13C3_PFBS_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.1400 x	%RSD=8.1
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.8435 x	%RSD=5.6
13C8_PFOS_EIS	(507.0 / 80.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 2.4230 x	%RSD=3.9
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5656 x	%RSD=7.4
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.6456 x	%RSD=8.6
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.8546 x	%RSD=11.8
13C8_PFOA_EIS	(506.0 / 78.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 3.9335 x	%RSD=3.8
D3_NMeFOA_EIS	(515.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.8394 x	%RSD=11.6
D5_NEtFOA_EIS	(531.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.6925 x	%RSD=5.3
D3_MeFOA_EIS	(573.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0386 x	%RSD=6.6
D5_EtFOA_EIS	(589.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 0.8519 x	%RSD=8.5
D7_NMeFOE_EIS	(623.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 2.7866 x	%RSD=7.9
D9_NEtFOE_EIS	(639.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 3.6830 x	%RSD=6.4
13C3_HFOA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 6.3969 x	%RSD=7.5

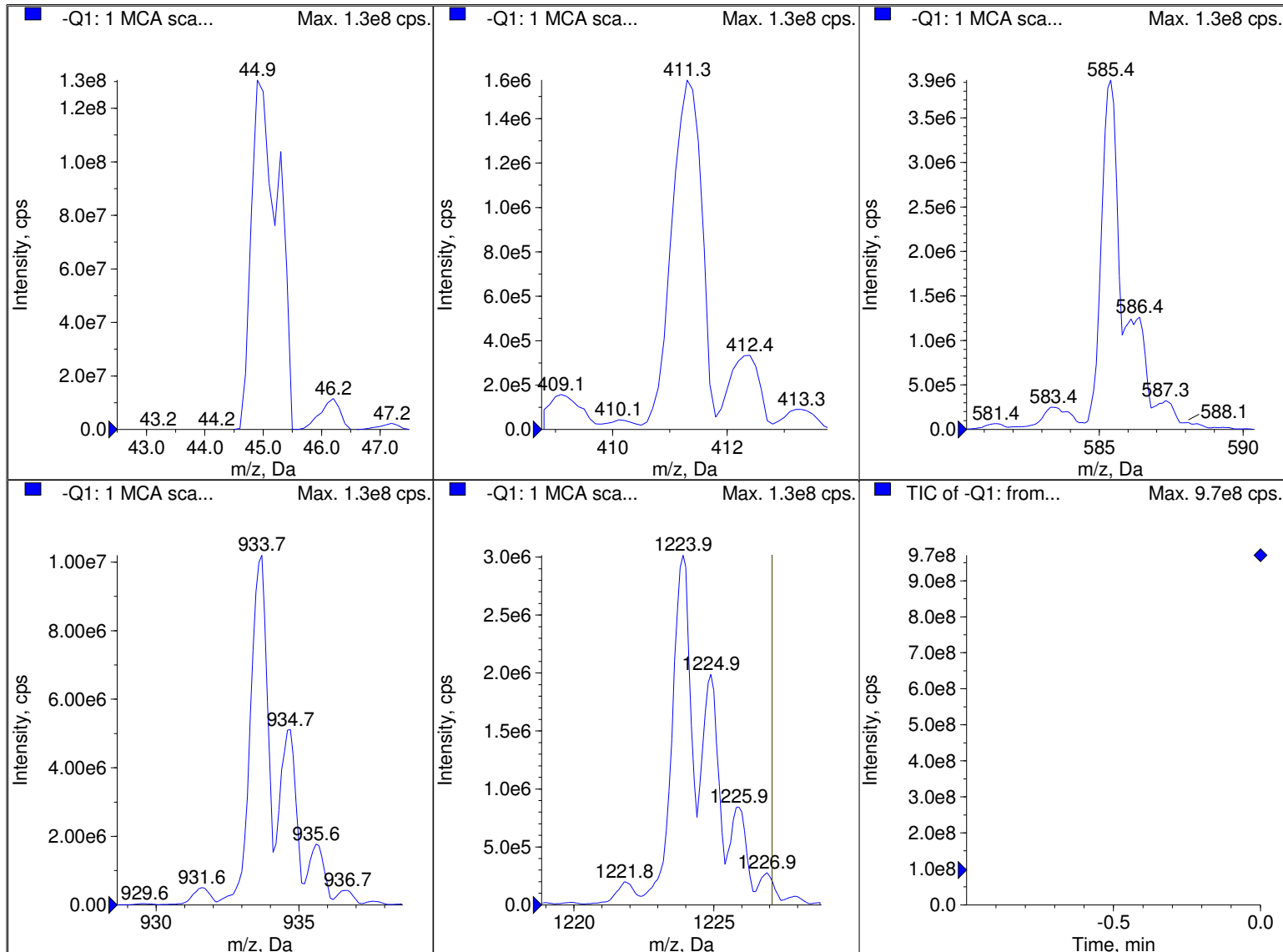
x= Concentration Analyte

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

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

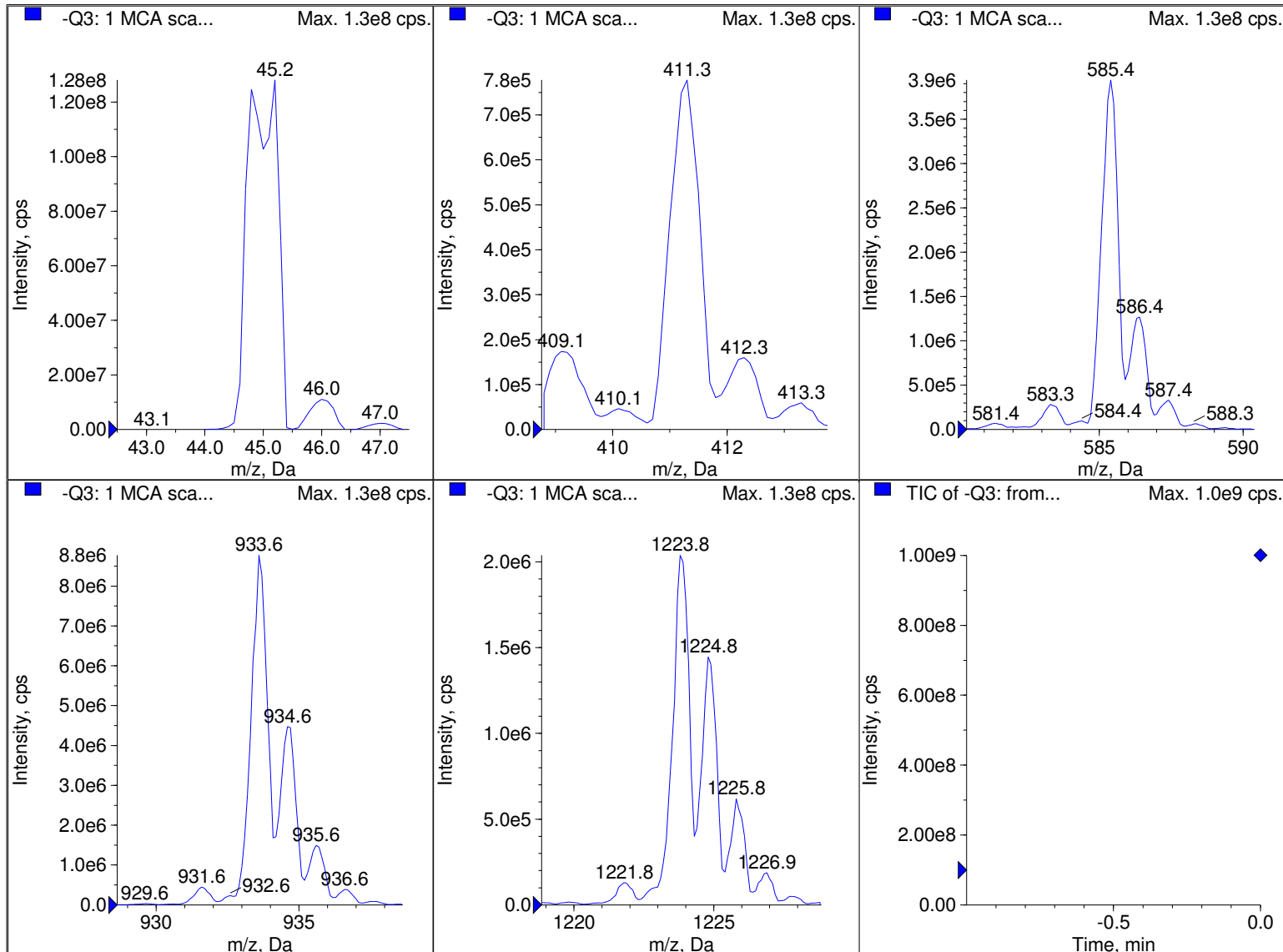
$$\text{Multiplier} = \frac{\text{Concentration of Analyte in curve standard mix}}{\text{Concentration of PFOA}}$$

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



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



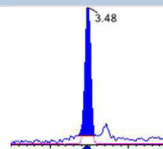
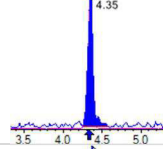
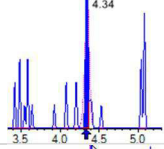
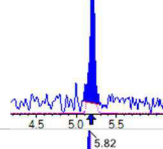
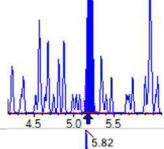
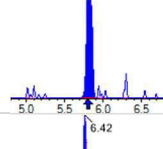
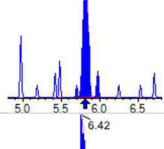
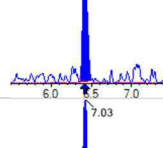
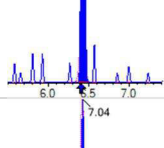
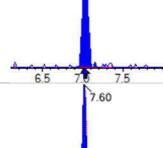
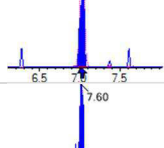
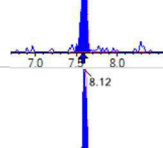
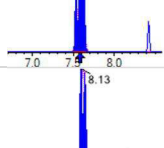
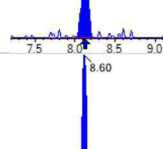
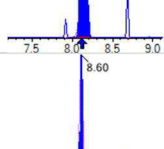
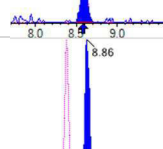
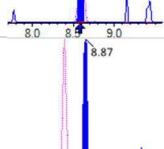
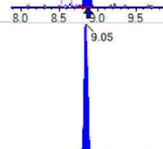
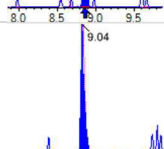
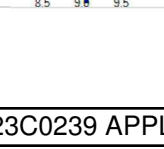
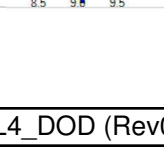
Peak List for "-Q3: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142403.wiff (Turbo Spray)"

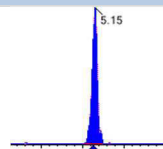
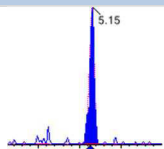
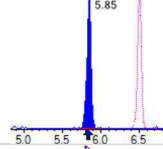
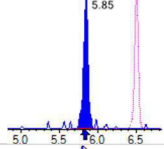
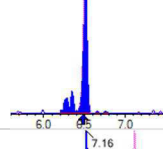
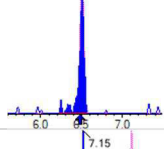
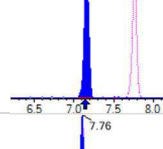
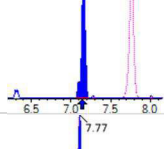
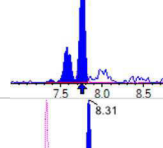
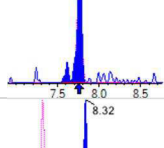
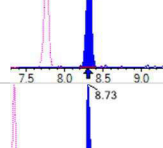
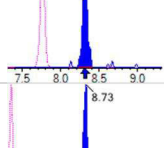
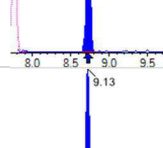
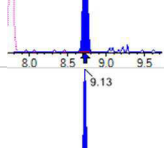
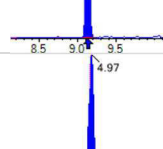
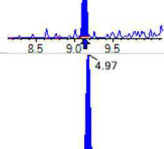
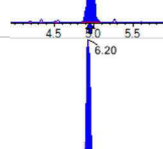
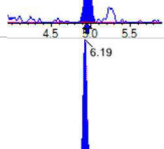
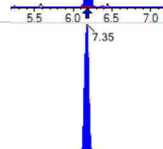
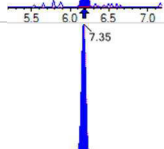

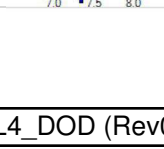
	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9799	1.2814e8	0.6414	0.0181
2	411.2590	411.2677	7.7810e5	0.6076	-8.6898e-3
3	585.3850	585.3784	3.9438e6	0.6511	6.5868e-3
4	933.6360	933.6279	8.7759e6	0.6302	8.0526e-3
5	1223.8450	1223.8609	2.0397e6	0.6225	-0.0159
6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

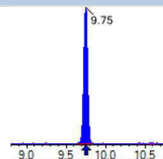
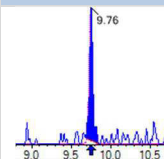
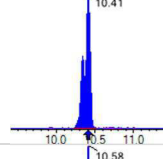
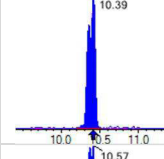
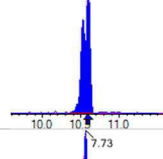
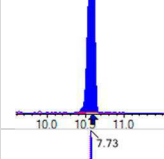
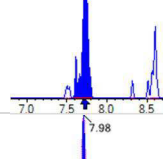
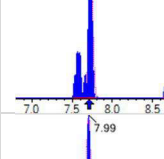
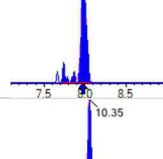
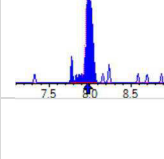
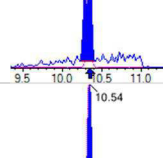
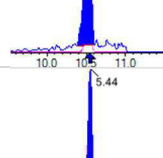
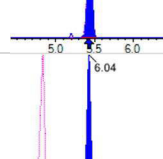
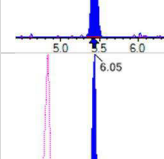
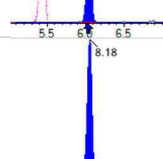
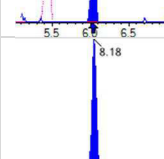
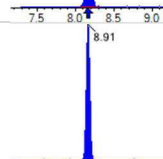
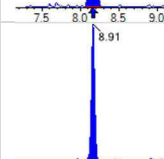
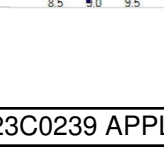
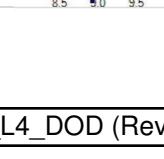
Initial Calibration:

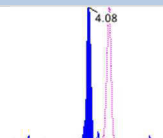
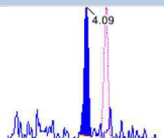
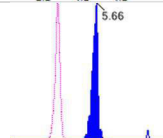
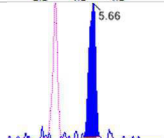
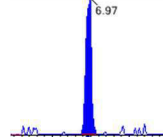
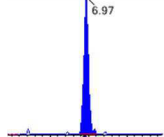
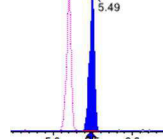
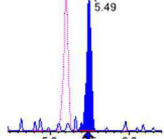
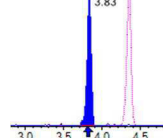
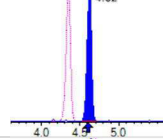
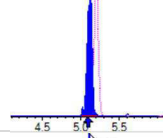
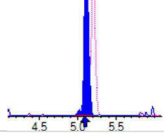
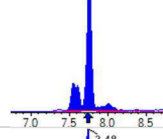
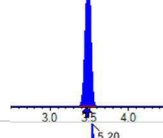
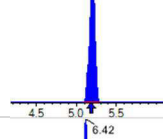
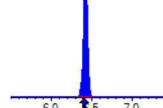
EPA 1633

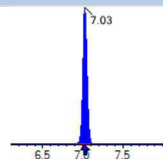
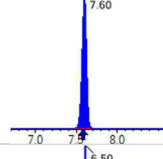
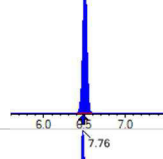
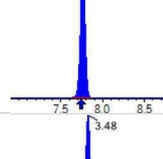
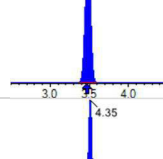
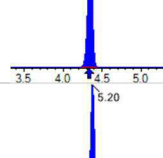
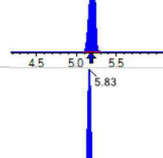
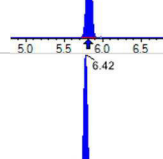
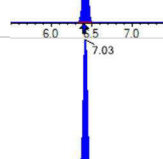
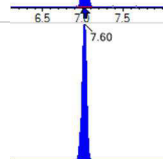
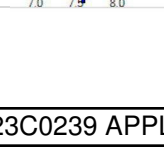
Initial Calibration: SC01442

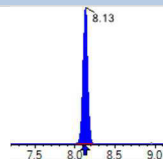
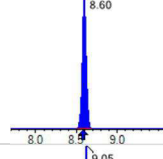
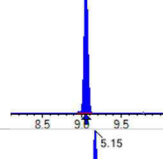
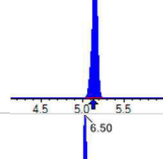
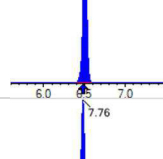
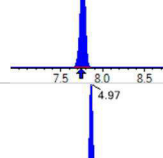
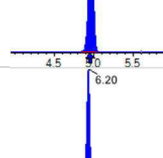
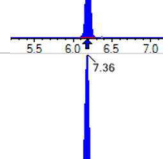
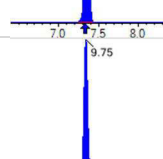
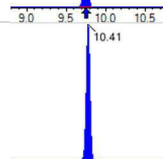
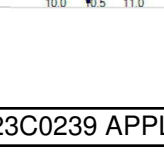
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 51001	(3.48, 1.00) (0.00, N/A, 0.0)	65.9	N/A 0.0 0.0	0.4175	N/A			
PFPeA	(263.0 / 219.0) 52561 (263.0 / 69.0) 586	(4.35, 1.00) (0.00, N/A, 0.6)	179.1 29.5	0.0111 84.9 84.9	0.2409	N/A			
PFHxA	(313.0 / 269.0) 30080 (313.0 / 119.0) 3796	(5.20, 1.00) (0.00, N/A, 0.0)	44.1 30.9	0.1262 115.6 115.6	0.1072	N/A			
PFHpA	(363.0 / 319.0) 20072 (363.0 / 169.0) 6725	(5.82, 1.00) (-0.01, N/A, 0.2)	963.9 151553.4	0.3351 109.8 109.8	0.0949	N/A			
PFOA	(413.0 / 369.0) 30753 (413.0 / 169.0) 7072	(6.42, 1.00) (0.00, N/A, -0.3)	84.9 14374.0	0.2300 73.5 73.5	0.1043	N/A			
PFNA	(463.0 / 419.0) 28672 (463.0 / 169.0) 7654	(7.03, 1.00) (0.00, N/A, -0.4)	10368.7 417426.4	0.2670 125.0 125.0	0.1129	N/A			
PFDA	(513.0 / 469.0) 33191 (513.0 / 169.0) 5472	(7.60, 1.00) (0.00, N/A, -0.1)	133.6 67.4	0.1649 143.8 143.8	0.1021	N/A			
PFUnA	(563.0 / 519.0) 34830 (563.0 / 169.0) 4800	(8.12, 1.00) (-0.01, N/A, -0.6)	144.6 16497.8	0.1378 116.6 116.6	0.1158	N/A			
PFDoA	(613.0 / 569.0) 31112 (613.0 / 169.0) 2979	(8.60, 1.00) (0.00, N/A, -0.1)	154.2 1013.2	0.0958 55.9 55.9	0.1252	N/A			
PFTrDA	(663.0 / 619.0) 28598 (663.0 / 169.0) 5175	(8.86, 1.03) (N/A, 0.00, -0.3)	296.2 318.4	0.1809 73.0 73.0	0.1263	N/A			
PFTeDA	(713.0 / 669.0) 27989 (713.0 / 169.0) 5596	(9.05, 1.00) (0.00, N/A, 0.4)	145.4 106.7	0.1999 99.2 99.2	0.1117	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], 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	(299.0 / 80.0) 49366 (299.0 / 99.0) 26991	(5.15, 1.00) (0.00, N/A, -0.3)	4699.0 459.6	0.5467 85.0 85.0	0.0963	N/A			
PFPeS	(349.0 / 80.0) 77022 (349.0 / 99.0) 31099	(5.85, 0.90) (N/A, 0.02, 0.1)	942.9 950.0	0.4038 119.1 119.1	0.0982	N/A			
PFHxS	(399.0 / 80.0) 63405 (399.0 / 99.0) 20674	(6.51, 1.00) (0.01, N/A, 0.3)	82149.7 1228.7	0.3261 94.1 94.1	0.0949	N/A			
PFHpS	(449.0 / 80.0) 64615 (449.0 / 99.0) 20246	(7.16, 0.92) (N/A, 0.02, 0.1)	3368.0 432.9	0.3133 112.9 112.9	0.0938	N/A			
PFOS	(499.0 / 80.0) 96931 (499.0 / 99.0) 26309	(7.76, 1.00) (0.00, N/A, -0.4)	147.8 143.7	0.2714 121.3 121.3	0.1002	N/A			MI2 DG 2023-04-12
PFNS	(549.0 / 80.0) 82249 (549.0 / 99.0) 19991	(8.31, 1.07) (N/A, 0.01, -0.3)	1889.0 59142.4	0.2431 100.4 100.4	0.0910	N/A			
PFDS	(599.0 / 80.0) 105015 (599.0 / 99.0) 26277	(8.73, 1.12) (N/A, 0.01, 0.0)	1257.8 1562.6	0.2502 111.7 111.7	0.1028	N/A			
PFDoS	(699.0 / 80.0) 84382 (699.0 / 99.0) 15119	(9.13, 1.18) (N/A, 0.00, -0.1)	456.7 92.1	0.1792 74.9 74.9	0.1074	N/A			
4:2FTS	(327.0 / 307.0) 72986 (327.0 / 81.0) 43585	(4.97, 1.00) (0.00, N/A, 0.3)	546.7 134.3	0.5972 87.8 87.8	0.3572	N/A			
6:2FTS	(427.0 / 407.0) 54126 (427.0 / 81.0) 32930	(6.20, 1.00) (0.00, N/A, 0.3)	1803.8 203.8	0.6084 86.4 86.4	0.4133	N/A			
8:2FTS	(527.0 / 507.0) 59925 (527.0 / 81.0) 42062	(7.35, 1.00) (0.00, N/A, 0.1)	12059.6 376.4	0.7019 103.9 103.9	0.4299	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], 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) 131881 (498.0 / 478.0) 3462	(9.75, 1.00) (0.00, N/A, -0.5)	702.2 42.5	0.0262 106.0 106.0	0.1116	N/A			
NMeFOSA	(512.0 / 219.0) 93392 (512.0 / 169.0) 75839	(10.41, 1.00) (0.00, N/A, 1.1)	778.9 530.4	0.8120 93.6 93.6	0.4507	N/A			
NEIFOSA	(526.0 / 219.0) 99939 (526.0 / 169.0) 117151	(10.58, 1.00) (-0.01, N/A, 0.5)	758.8 639.4	1.1722 93.8 93.8	0.4146	N/A			
NMeFOSAA	(570.0 / 419.0) 14664 (570.0 / 483.0) 7645	(7.73, 1.00) (0.00, N/A, 0.4)	52.4 2885.4	0.5213 112.5 112.5	0.0968	N/A			
NEIFOSAA	(584.0 / 419.0) 12358 (584.0 / 526.0) 8768	(7.98, 1.00) (0.00, N/A, -0.2)	382.1 589.2	0.7095 116.2 116.2	0.0935	N/A			
NMeFOSE	(616.0 / 59.0) 35761	(10.35, 1.00) (0.01, N/A, 0.0)	103.8	N/A 0.0 0.0	0.3936	N/A			
NEtFOSE	(630.0 / 59.0) 43668	(10.54, 1.00) (0.01, N/A, 0.0)	117.8	N/A 0.0 0.0	0.3874	N/A			
HFPO-DA	(285.0 / 169.0) 29718 (285.0 / 185.0) 74815	(5.44, 1.00) (0.00, N/A, 0.2)	196.1 467.7	2.5175 96.8 96.8	0.2057	N/A			
ADONA	(377.0 / 85.0) 101012 (377.0 / 251.0) 13309	(6.04, 1.11) (N/A, 0.02, -0.2)	783.0 1346.4	0.1318 132.7 132.7	0.1957	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 296927 (533.0 / 353.0) 80758	(8.18, 1.50) (N/A, 0.02, 0.3)	764.4 350.3	0.2720 93.7 93.7	0.1911	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 178084 (633.0 / 453.0) 57186	(8.91, 1.64) (N/A, 0.00, 0.0)	1014.0 498.9	0.3211 95.8 95.8	0.1939	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], 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) 3409 (241.0 / 117.0) 4986	(4.08, 0.94) (N/A, 0.02, -0.6)	23.9 11.0	1.4625 88.6 88.6	0.4263	N/A			
5:3FTCA	(341.0 / 236.7) 15735 (341.0 / 217.0) 29058	(5.66, 1.09) (N/A, 0.03, 0.3)	936610.1 91.4	1.8468 117.7 117.7	0.3568	N/A			
7:3FTCA	(441.0 / 317.0) 31485 (441.0 / 337.0) 29537	(6.97, 1.34) (N/A, 0.01, 0.2)	123.9 1462.5	0.9381 108.9 108.9	0.4077	N/A			
PFEESA	(315.0 / 135.0) 76309 (315.0 / 83.0) 22009	(5.49, 1.06) (N/A, 0.03, 0.1)	3255.2 93.0	0.2884 118.2 118.2	0.2162	N/A			
PFMPA	(229.0 / 85.0) 9287	(3.83, 0.88) (N/A, 0.02, 0.0)	1128.6	N/A 0.0 0.0	0.1998	N/A			
PFMBA	(279.0 / 85.0) 36216	(4.62, 1.06) (N/A, 0.02, 0.0)	2750.3	N/A 0.0 0.0	0.2128	N/A			
NFDHA	(295.0 / 201.0) 25289 (295.0 / 85.0) 35586	(5.12, 0.98) (N/A, 0.03, 0.5)	794423.1 279.0	1.4072 143.7 143.7	0.1763	N/A			
TDCA	(499.0 / 80.0) 102465	(7.76, 1.00) (N/A, 0.02, 0.0)	1395.1	N/A 0.0 0.0	0.1231	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 129330	(3.48, N/A) (N/A, 0.02, N/A)	1392.9	N/A	1.0609 [1.0000]	106.1% { 108.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 197891	(5.20, N/A) (N/A, 0.03, N/A)	3507501.1	N/A	0.9757 [1.0000]	97.6% { 100.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 327921	(6.42, N/A) (N/A, 0.02, N/A)	3658858.2	N/A	1.0319 [1.0000]	103.2% { 101.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], 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
13C5_PFNA_IIS	(468.0 / 423.0) 304417	(7.03, N/A) (N/A, 0.01, N/A)	443217.1	N/A	1.0030 [1.0000]	100.3% {99.2%}			
13C2_PFDA_IIS	(515.0 / 470.1) 308435	(7.60, N/A) (N/A, 0.02, N/A)	1799.9	N/A	0.9506 [1.0000]	95.1% {100.7%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 442358	(6.50, N/A) (N/A, 0.02, N/A)	11474.6	N/A	0.9877 [1.0000]	98.8% {107.1%}			
13C4_PFOS_IIS	(503.0 / 79.9) 686288	(7.76, N/A) (N/A, 0.02, N/A)	2001.3	N/A	1.0091 [1.0000]	100.9% {106.1%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1118397	(3.48, N/A) (N/A, 0.02, N/A)	6711.6	N/A	8.1562 [8.0000]	102.0% {107.0%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 908353	(4.35, N/A) (N/A, 0.02, N/A)	3941.0	N/A	4.0979 [4.0000]	102.4% {101.3%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 581690	(5.20, N/A) (N/A, 0.03, N/A)	1492.6	N/A	2.0738 [2.0000]	103.7% {99.5%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 490950	(5.83, N/A) (N/A, 0.02, N/A)	3025.7	N/A	2.0039 [2.0000]	100.2% {100.2%}			
13C8_PFOA_EIS	(421.0 / 376.0) 625228	(6.42, N/A) (N/A, 0.02, N/A)	2840.0	N/A	1.9317 [2.0000]	96.6% {101.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 275397	(7.03, N/A) (N/A, 0.02, N/A)	1328.5	N/A	0.9629 [1.0000]	96.3% {92.0%}			
13C6_PFDA_EIS	(519.0 / 474.0) 345755	(7.60, N/A) (N/A, 0.02, N/A)	1898.1	N/A	0.9992 [1.0000]	99.9% {96.1%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], 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
13C7_PFUa_EIS	(570.0 / 525.0) 341819	(8.13, N/A) (N/A, 0.01, N/A)	5128.5	N/A	1.0642 [1.0000]	106.4% {94.7%}			
13C2_PFDa_EIS	(615.0 / 570.0) 274024	(8.60, N/A) (N/A, 0.01, N/A)	328597.6	N/A	0.9964 [1.0000]	99.6% {95.4%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 273452	(9.05, N/A) (N/A, 0.00, N/A)	1228.0	N/A	1.0545 [1.0000]	105.4% {90.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1438119	(5.15, N/A) (N/A, 0.03, N/A)	2048.4	N/A	2.0707 [2.0000]	103.5% {103.1%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 849949	(6.50, N/A) (N/A, 0.02, N/A)	5378.6	N/A	2.0845 [2.0000]	104.2% {105.5%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1709096	(7.76, N/A) (N/A, 0.02, N/A)	3395.8	N/A	2.0556 [2.0000]	102.8% {102.6%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 275260	(4.97, N/A) (N/A, 0.02, N/A)	1161.3	N/A	4.4006 [4.0000]	110.0% {110.4%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 306075	(6.20, N/A) (N/A, 0.02, N/A)	2718.4	N/A	4.2873 [4.0000]	107.2% {104.6%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 395209	(7.36, N/A) (N/A, 0.02, N/A)	7602.6	N/A	4.1815 [4.0000]	104.5% {110.1%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 2696653	(9.75, N/A) (N/A, 0.00, N/A)	5446.6	N/A	1.9979 [2.0000]	99.9% {103.8%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 499488	(10.41, N/A) (N/A, 0.00, N/A)	2490.4	N/A	1.7342 [2.0000]	86.7% {96.1%}			

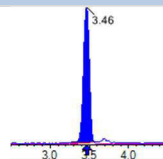
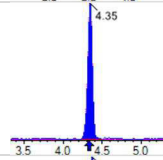
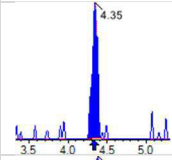
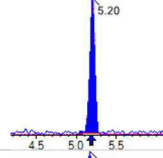
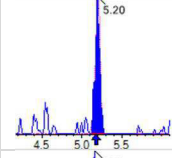
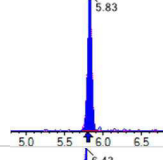
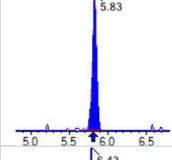
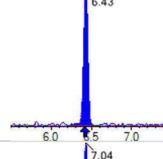
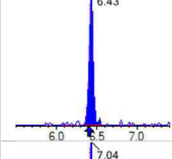
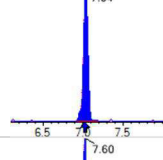
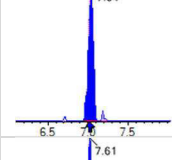
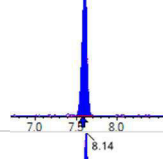
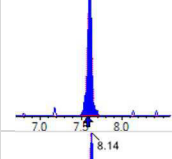
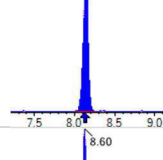
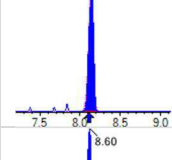
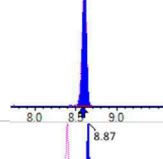
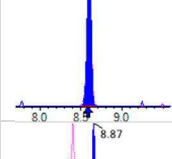
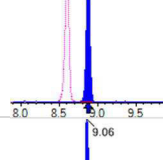
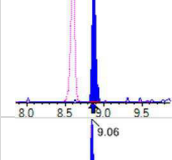
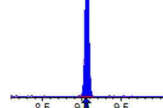
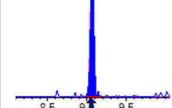


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (1)
 Acquired: 2023/04/12 - 10:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 458853	(10.59, N/A) (N/A, 0.00, N/A)	2753.0	N/A	1.9309 [2.0000]	96.5% {99.7%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 712577	(7.73, N/A) (N/A, 0.02, N/A)	2907.9	N/A	3.9987 [4.0000]	100.0% {105.9%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 597748	(7.98, N/A) (N/A, 0.02, N/A)	12388.6	N/A	4.0895 [4.0000]	102.2% {111.3%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1664196	(10.34, N/A) (N/A, 0.00, N/A)	1639.0	N/A	17.4042 [20.0000]	87.0% {87.1%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2288971	(10.53, N/A) (N/A, 0.00, N/A)	1350.5	N/A	18.1116 [20.0000]	90.6% {90.7%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1368414	(5.44, N/A) (N/A, 0.03, N/A)	2578.2	N/A	8.6479 [8.0000]	108.1% {106.0%}			

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	(213.0 / 169.0) 238991	(3.46, 1.00) (0.00, N/A, 0.0)	113.6	N/A 0.0 0.0	1.9860	N/A			
PFPeA	(263.0 / 219.0) 228762 (263.0 / 69.0) 3637	(4.35, 1.00) (0.00, N/A, 0.0)	679.2 84.6	0.0159 121.1 121.1	1.0164	N/A			
PFHxA	(313.0 / 269.0) 160476 (313.0 / 119.0) 15087	(5.20, 1.00) (0.00, N/A, 0.1)	240.7 503.6	0.0940 86.1 86.1	0.6008	N/A			
PFHpA	(363.0 / 319.0) 109523 (363.0 / 169.0) 33202	(5.83, 1.00) (0.00, N/A, -0.2)	577.5 1401.1	0.3032 99.3 99.3	0.5089	N/A			
PFOA	(413.0 / 369.0) 145930 (413.0 / 169.0) 44177	(6.43, 1.00) (0.00, N/A, 0.0)	350.2 1408.0	0.3027 96.7 96.7	0.5146	N/A			
PFNA	(463.0 / 419.0) 131614 (463.0 / 169.0) 30834	(7.04, 1.00) (0.00, N/A, -0.2)	34935.3 453625.9	0.2343 109.7 109.7	0.4870	N/A			
PFDA	(513.0 / 469.0) 170874 (513.0 / 169.0) 22910	(7.60, 1.00) (0.00, N/A, -0.1)	446.0 581.8	0.1341 117.0 117.0	0.5308	N/A			
PFUnA	(563.0 / 519.0) 151356 (563.0 / 169.0) 18312	(8.14, 1.00) (0.00, N/A, -0.1)	773.0 5411.9	0.1210 102.4 102.4	0.5206	N/A			
PFDoA	(613.0 / 569.0) 128856 (613.0 / 169.0) 24489	(8.60, 1.00) (0.00, N/A, 0.2)	913.1 8704.2	0.1901 110.9 110.9	0.5048	N/A			
PFTrDA	(663.0 / 619.0) 125766 (663.0 / 169.0) 35979	(8.87, 1.03) (N/A, 0.01, 0.0)	801.5 356.9	0.2861 115.4 115.4	0.5408	N/A			
PFTeDA	(713.0 / 669.0) 127757 (713.0 / 169.0) 29595	(9.06, 1.00) (0.00, N/A, -0.1)	718.2 229.2	0.2317 115.0 115.0	0.5175	N/A			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (2)
 Acquired: 2023/04/12 - 10:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 234502 (299.0 / 99.0) 141545	(5.15, 1.00) (0.00, N/A, 0.0)	618944.4 6243.0	0.6036 93.9 93.9	0.4490	N/A			
PFPeS	(349.0 / 80.0) 367490 (349.0 / 99.0) 116090	(5.85, 0.90) (N/A, 0.02, -0.6)	15031.2 258698.7	0.3159 93.2 93.2	0.4971	N/A			
PFHxS	(399.0 / 80.0) 291776 (399.0 / 99.0) 105662	(6.51, 1.00) (0.00, N/A, 0.1)	6335647.6 1804.2	0.3621 104.6 104.6	0.4631	N/A			
PFHpS	(449.0 / 80.0) 327457 (449.0 / 99.0) 102856	(7.16, 0.92) (N/A, 0.02, -0.1)	9606.6 4560.9	0.3141 113.2 113.2	0.5010	N/A			
PFOS	(499.0 / 80.0) 440225 (499.0 / 99.0) 96380	(7.77, 1.00) (0.00, N/A, 0.0)	328.9 488.2	0.2189 97.8 97.8	0.4800	N/A			MI2 DG 2023-04-12
PFNS	(549.0 / 80.0) 411080 (549.0 / 99.0) 116527	(8.32, 1.07) (N/A, 0.02, -0.1)	377930.1 3882.5	0.2835 117.1 117.1	0.4796	N/A			
PFDS	(599.0 / 80.0) 495896 (599.0 / 99.0) 110181	(8.73, 1.12) (N/A, 0.01, 0.0)	644466.7 4068.7	0.2222 99.2 99.2	0.5118	N/A			
PFDoS	(699.0 / 80.0) 366330 (699.0 / 99.0) 84289	(9.14, 1.18) (N/A, 0.01, 0.1)	1586.1 683.1	0.2301 96.1 96.1	0.4915	N/A			
4:2FTS	(327.0 / 307.0) 336203 (327.0 / 81.0) 207246	(4.97, 1.00) (0.00, N/A, -0.1)	2731.6 498.2	0.6164 90.7 90.7	1.8669	N/A			
6:2FTS	(427.0 / 407.0) 225058 (427.0 / 81.0) 160604	(6.19, 1.00) (0.00, N/A, 0.1)	148926.7 1011.3	0.7136 101.3 101.3	2.0702	N/A			
8:2FTS	(527.0 / 507.0) 238649 (527.0 / 81.0) 144104	(7.36, 1.00) (0.00, N/A, 0.0)	2684.0 769.3	0.6038 89.4 89.4	2.2448	N/A			

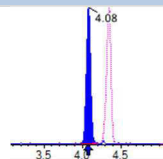
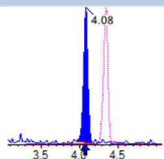
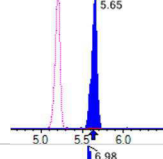
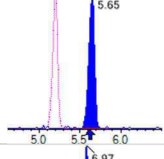
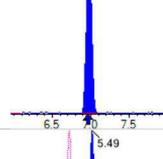
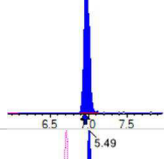
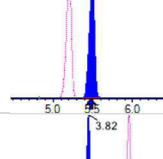
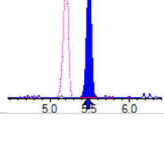
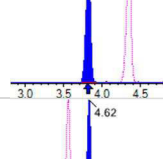
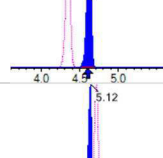
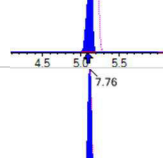
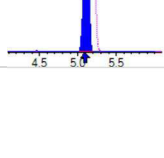
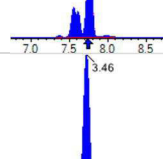
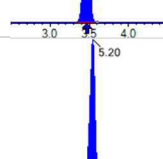
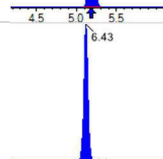
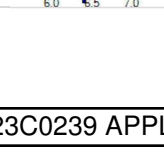


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (2)
 Acquired: 2023/04/12 - 10:25

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
PFOSA	(498.0 / 78.0) 612187 (498.0 / 478.0) 14029	(9.76, 1.00) (0.00, N/A, 0.0)	2203.4 148.1	0.0229 92.6 92.6	0.5124	N/A			
NMeFOSA	(512.0 / 219.0) 474305 (512.0 / 169.0) 408504	(10.42, 1.00) (0.00, N/A, 1.5)	2362.8 1694.6	0.8613 99.3 99.3	2.0875	N/A			
NEtFOSA	(526.0 / 219.0) 490398 (526.0 / 169.0) 602367	(10.60, 1.00) (0.00, N/A, 1.1)	2743.3 2214.7	1.2283 98.3 98.3	2.0518	N/A			
NMeFOSAA	(570.0 / 419.0) 81488 (570.0 / 483.0) 27500	(7.74, 1.00) (0.00, N/A, -0.5)	116213.1 196.8	0.3375 72.8 72.8	0.5926	N/A			
NEtFOSAA	(584.0 / 419.0) 62099 (584.0 / 526.0) 34414	(7.99, 1.00) (0.00, N/A, -0.4)	338.0 440.2	0.5542 90.8 90.8	0.5060	N/A			
NMeFOSE	(616.0 / 59.0) 221629	(10.35, 1.00) (0.01, N/A, 0.0)	506.4	N/A 0.0 0.0	2.1130	N/A			
NEtFOSE	(630.0 / 59.0) 247386	(10.55, 1.00) (0.01, N/A, 0.0)	422.1	N/A 0.0 0.0	2.0533	N/A			
HFPO-DA	(285.0 / 169.0) 134549 (285.0 / 185.0) 377284	(5.44, 1.00) (0.00, N/A, 0.1)	948.5 1729.6	2.8041 107.8 107.8	0.9803	N/A			
ADONA	(377.0 / 85.0) 487582 (377.0 / 251.0) 43518	(6.05, 1.11) (N/A, 0.02, 0.4)	1886.3 882.2	0.0893 89.9 89.9	0.9942	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 1433365 (533.0 / 353.0) 429490	(8.19, 1.51) (N/A, 0.02, -0.1)	1678.0 1013.1	0.2996 103.2 103.2	0.9708	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 812812 (633.0 / 453.0) 316868	(8.92, 1.64) (N/A, 0.01, 0.2)	3296.6 1696.3	0.3898 116.3 116.3	0.9313	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) 14940 (241.0 / 117.0) 28773	(4.08, 0.94) (N/A, 0.01, -0.2)	37.5 25.0	1.9259 116.6 116.6	1.8115	N/A			
5:3FTCA	(341.0 / 236.7) 72567 (341.0 / 217.0) 156422	(5.65, 1.09) (N/A, 0.02, 0.1)	3146.5 343.6	2.1556 137.4 137.4	1.7285	N/A			
7:3FTCA	(441.0 / 317.0) 151337 (441.0 / 337.0) 130877	(6.98, 1.34) (N/A, 0.02, 0.2)	539.9 899.0	0.8648 100.4 100.4	2.0585	N/A			
PFEESA	(315.0 / 135.0) 315371 (315.0 / 83.0) 77936	(5.49, 1.06) (N/A, 0.02, 0.0)	32253.3 340.1	0.2471 101.3 101.3	0.9386	N/A			
PFMPA	(229.0 / 85.0) 50789	(3.82, 0.88) (N/A, 0.01, 0.0)	1598.5	N/A 0.0 0.0	1.0597	N/A			
PFMBA	(279.0 / 85.0) 173936	(4.62, 1.06) (N/A, 0.02, 0.0)	2264.5	N/A 0.0 0.0	0.9911	N/A			
NFDHA	(295.0 / 201.0) 168592 (295.0 / 85.0) 145805	(5.12, 0.98) (N/A, 0.03, 0.1)	4849.2 2246.7	0.8648 88.3 88.3	1.2348	N/A			
TDCA	(499.0 / 80.0) 415353	(7.76, 1.00) (N/A, 0.02, 0.0)	5139.1	N/A 0.0 0.0	0.5261	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 124269	(3.46, N/A) (N/A, 0.00, N/A)	1425.8	N/A	1.0194 [1.0000]	101.9% { 103.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 194247	(5.20, N/A) (N/A, 0.03, N/A)	2390.4	N/A	0.9577 [1.0000]	95.8% { 98.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 279927	(6.43, N/A) (N/A, 0.02, N/A)	3419.1	N/A	0.8809 [1.0000]	88.1% { 86.8% }			

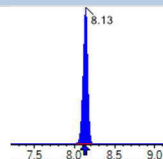
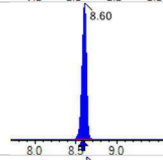
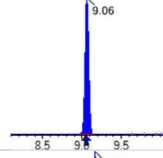
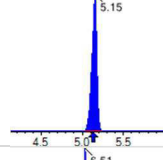
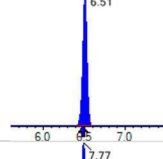
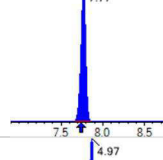
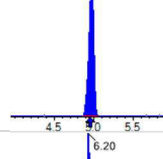
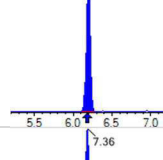
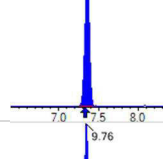
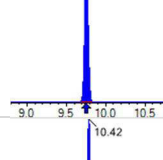
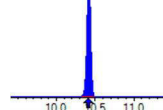


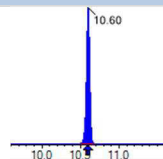
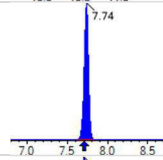
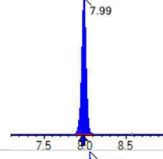
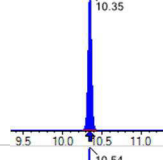
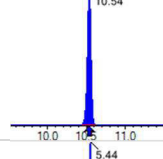
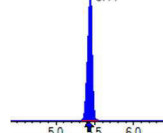
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

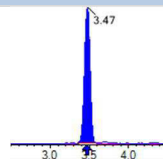
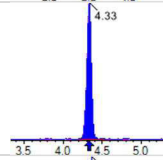
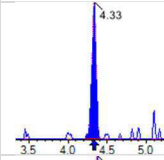
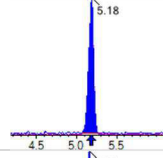
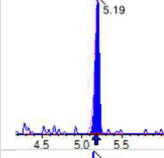
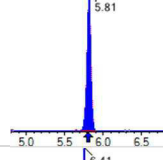
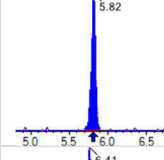
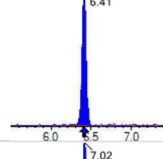
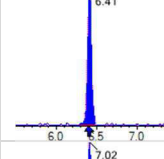
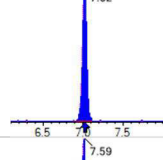
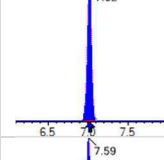
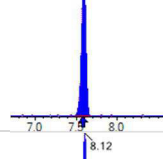
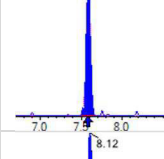
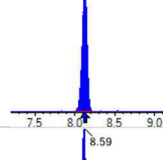
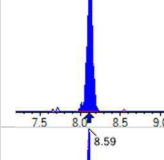
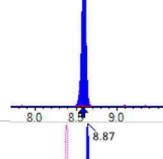
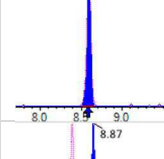
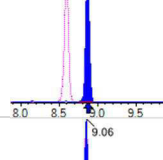
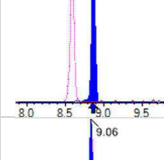
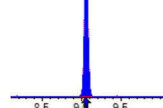
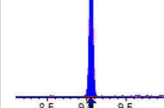
Sample I.D.: SC01442-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (2)
 Acquired: 2023/04/12 - 10:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 283905	(7.03, N/A) (N/A, 0.02, N/A)	2521.6	N/A	0.9354 [1.0000]	93.5% { 92.5% }			
13C2_PFDA_IIS	(515.0 / 470.1) 317674	(7.60, N/A) (N/A, 0.02, N/A)	2580.6	N/A	0.9791 [1.0000]	97.9% { 103.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 423531	(6.51, N/A) (N/A, 0.02, N/A)	2100.3	N/A	0.9457 [1.0000]	94.6% { 102.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 657497	(7.77, N/A) (N/A, 0.03, N/A)	2702.0	N/A	0.9668 [1.0000]	96.7% { 101.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1101719	(3.46, N/A) (N/A, 0.00, N/A)	5080.2	N/A	8.3618 [8.0000]	104.5% { 105.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 936811	(4.35, N/A) (N/A, 0.01, N/A)	2920.1	N/A	4.3056 [4.0000]	107.6% { 104.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 553795	(5.20, N/A) (N/A, 0.03, N/A)	1586.5	N/A	2.0114 [2.0000]	100.6% { 94.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 499353	(5.83, N/A) (N/A, 0.02, N/A)	1449.0	N/A	2.0764 [2.0000]	103.8% { 101.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 601529	(6.43, N/A) (N/A, 0.02, N/A)	10428.4	N/A	2.1772 [2.0000]	108.9% { 97.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 292999	(7.03, N/A) (N/A, 0.02, N/A)	449.8	N/A	1.0985 [1.0000]	109.8% { 97.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 342508	(7.60, N/A) (N/A, 0.02, N/A)	49351.4	N/A	0.9611 [1.0000]	96.1% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 330428	(8.13, N/A) (N/A, 0.02, N/A)	8072.6	N/A	0.9988 [1.0000]	99.9% { 91.6% }			
13C2_PFDa_EIS	(615.0 / 570.0) 281445	(8.60, N/A) (N/A, 0.01, N/A)	1502.5	N/A	0.9936 [1.0000]	99.4% { 98.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 269350	(9.06, N/A) (N/A, 0.01, N/A)	1231.3	N/A	1.0084 [1.0000]	100.8% { 89.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1464510	(5.15, N/A) (N/A, 0.03, N/A)	3563.1	N/A	2.2025 [2.0000]	110.1% { 105.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 801395	(6.51, N/A) (N/A, 0.02, N/A)	2077.4	N/A	2.0528 [2.0000]	102.6% { 99.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1621026	(7.77, N/A) (N/A, 0.02, N/A)	2035.0	N/A	2.0350 [2.0000]	101.8% { 97.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 242584	(4.97, N/A) (N/A, 0.02, N/A)	1175.1	N/A	4.0506 [4.0000]	101.3% { 97.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 254104	(6.20, N/A) (N/A, 0.02, N/A)	2880.8	N/A	3.7175 [4.0000]	92.9% { 86.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 301405	(7.36, N/A) (N/A, 0.03, N/A)	2307.0	N/A	3.3307 [4.0000]	83.3% { 84.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2726947	(9.76, N/A) (N/A, 0.01, N/A)	5323.7	N/A	2.1088 [2.0000]	105.4% { 104.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 547663	(10.42, N/A) (N/A, 0.01, N/A)	2261.3	N/A	1.9847 [2.0000]	99.2% { 105.3% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 455024	(10.60, N/A) (N/A, 0.01, N/A)	2794.9	N/A	1.9986 [2.0000]	99.9% { 98.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 647108	(7.74, N/A) (N/A, 0.02, N/A)	2306.1	N/A	3.7903 [4.0000]	94.8% { 96.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 554990	(7.99, N/A) (N/A, 0.02, N/A)	8459.8	N/A	3.9632 [4.0000]	99.1% { 103.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1921402	(10.35, N/A) (N/A, 0.01, N/A)	1739.3	N/A	20.9739 [20.0000]	104.9% { 100.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2446736	(10.54, N/A) (N/A, 0.01, N/A)	1430.3	N/A	20.2077 [20.0000]	101.0% { 97.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1300215	(5.44, N/A) (N/A, 0.03, N/A)	1768.8	N/A	8.3710 [8.0000]	104.6% { 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
PFBA	(213.0 / 169.0) 480319	(3.47, 1.00) (0.00, N/A, 0.0)	176.1	N/A 0.0 0.0	3.8219	N/A			
PFPeA	(263.0 / 219.0) 450291 (263.0 / 69.0) 3790	(4.33, 1.00) (0.00, N/A, 0.1)	1051.6 113.0	0.0084 64.1 64.1	1.9506	N/A			
PFHxA	(313.0 / 269.0) 294011 (313.0 / 119.0) 22148	(5.18, 1.00) (0.00, N/A, -0.7)	392.7 667.8	0.0753 69.0 69.0	1.0103	N/A			
PFHpA	(363.0 / 319.0) 236373 (363.0 / 169.0) 74851	(5.81, 1.00) (0.00, N/A, -0.2)	6343.1 112973.7	0.3167 103.7 103.7	1.0407	N/A			
PFOA	(413.0 / 369.0) 310116 (413.0 / 169.0) 98577	(6.41, 1.00) (0.00, N/A, -0.1)	652.4 1285.3	0.3179 101.5 101.5	0.9928	N/A			
PFNA	(463.0 / 419.0) 254158 (463.0 / 169.0) 56250	(7.02, 1.00) (0.00, N/A, 0.1)	8571.6 6851.4	0.2213 103.6 103.6	0.9427	N/A			
PFDA	(513.0 / 469.0) 335920 (513.0 / 169.0) 40459	(7.59, 1.00) (0.00, N/A, 0.5)	626.4 766.2	0.1204 105.1 105.1	0.9522	N/A			
PFUnA	(563.0 / 519.0) 291004 (563.0 / 169.0) 37661	(8.12, 1.00) (0.00, N/A, 0.1)	1093.3 620.3	0.1294 109.5 109.5	0.9676	N/A			
PFDoA	(613.0 / 569.0) 273984 (613.0 / 169.0) 43856	(8.59, 1.00) (0.00, N/A, -0.1)	986.9 2317.6	0.1601 93.4 93.4	1.0244	N/A			
PFTrDA	(663.0 / 619.0) 241450 (663.0 / 169.0) 58668	(8.87, 1.03) (N/A, 0.00, -0.1)	1129.4 517.9	0.2430 98.1 98.1	0.9908	N/A			
PFTeDA	(713.0 / 669.0) 250832 (713.0 / 169.0) 47487	(9.06, 1.00) (0.00, N/A, 0.1)	1082.7 547.5	0.1893 93.9 93.9	0.9446	N/A			



Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL3
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
Path: S2023-04-12A (3)
Acquired: 2023/04/12 - 10:38

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	(299.0 / 80.0) 448553 (299.0 / 99.0) 301574	(5.14, 1.00) (0.00, N/A, 0.1)	81067.6 3034.3	0.6723 104.6 104.6	0.8700	N/A			
PFPeS	(349.0 / 80.0) 679523 (349.0 / 99.0) 256783	(5.83, 0.90) (N/A, 0.01, -0.3)	3511.6 32600.6	0.3779 111.4 111.4	0.9073	N/A			
PFHxS	(399.0 / 80.0) 588625 (399.0 / 99.0) 193946	(6.49, 1.00) (0.00, N/A, 0.1)	72352.0 2041.9	0.3295 95.1 95.1	0.9223	N/A			
PFHpS	(449.0 / 80.0) 643471 (449.0 / 99.0) 183274	(7.15, 0.92) (N/A, 0.01, 0.0)	17266.4 8542.7	0.2848 102.7 102.7	0.9473	N/A			
PFOS	(499.0 / 80.0) 912790 (499.0 / 99.0) 199995	(7.75, 1.00) (0.00, N/A, 0.0)	1440.4 568.8	0.2191 97.9 97.9	0.9575	N/A			MI2 DG 2023-04-12
PFNS	(549.0 / 80.0) 856560 (549.0 / 99.0) 205485	(8.31, 1.07) (N/A, 0.01, -0.1)	22165434.3 4188.0	0.2399 99.1 99.1	0.9615	N/A			
PFDS	(599.0 / 80.0) 964845 (599.0 / 99.0) 219520	(8.73, 1.13) (N/A, 0.01, 0.0)	4084.8 11730.4	0.2275 101.5 101.5	0.9580	N/A			
PFDoS	(699.0 / 80.0) 787486 (699.0 / 99.0) 168891	(9.13, 1.18) (N/A, 0.00, 0.0)	2648.9 855.8	0.2145 89.6 89.6	1.0165	N/A			
4:2FTS	(327.0 / 307.0) 758892 (327.0 / 81.0) 473280	(4.95, 1.00) (0.00, N/A, 0.0)	2392.2 686.1	0.6236 91.7 91.7	3.8695	N/A			
6:2FTS	(427.0 / 407.0) 480993 (427.0 / 81.0) 306371	(6.18, 1.00) (0.00, N/A, 0.1)	3380.9 2047.6	0.6370 90.4 90.4	3.7860	N/A			
8:2FTS	(527.0 / 507.0) 489400 (527.0 / 81.0) 362132	(7.35, 1.00) (0.00, N/A, 0.1)	2121.3 1510.8	0.7400 109.5 109.5	3.9537	N/A			

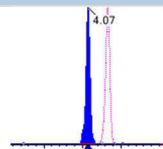
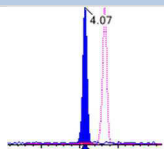
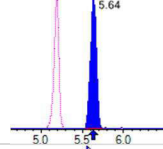
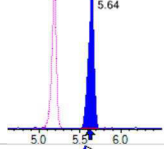
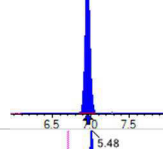
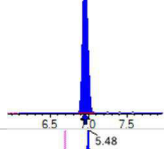
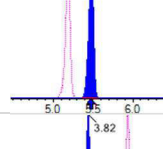
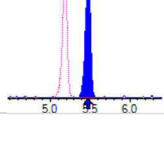
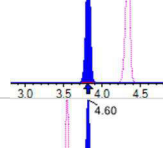
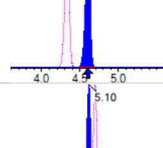
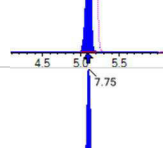
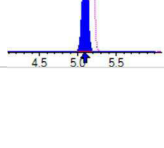
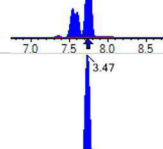
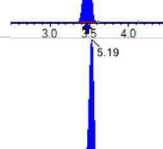
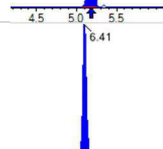
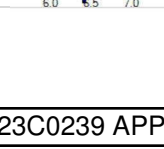


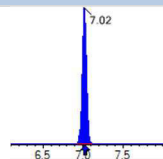
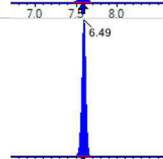
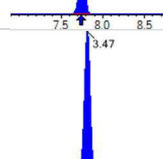
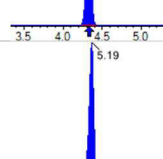
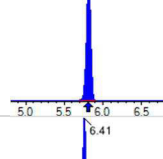
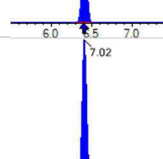
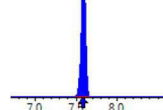
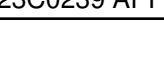
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

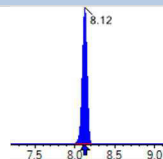
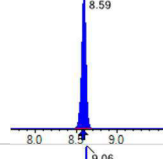
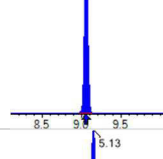
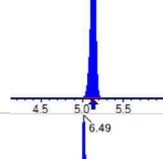
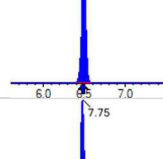
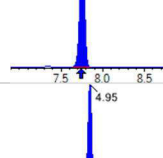
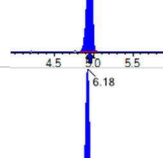
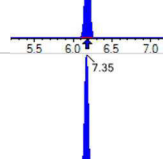
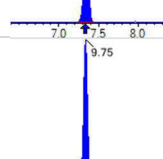
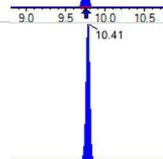
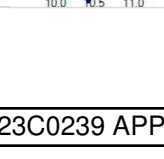
Sample I.D.: SC01442-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

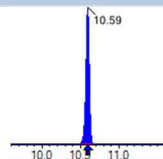
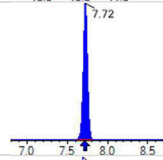
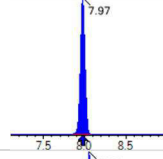
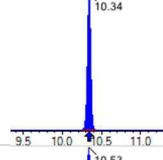
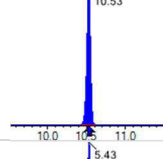
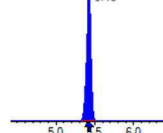
Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (3)
 Acquired: 2023/04/12 - 10:38

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
PFOSA	(498.0 / 78.0) 1251068 (498.0 / 478.0) 30835	(9.75, 1.00) (0.00, N/A, -0.2)	3041.5 315.2	0.0246 99.5 99.5	0.9986	N/A			
NMeFOSA	(512.0 / 219.0) 969905 (512.0 / 169.0) 871766	(10.41, 1.00) (0.00, N/A, 1.2)	2833.5 2939.0	0.8988 103.6 103.6	3.9788	N/A			
NEtFOSA	(526.0 / 219.0) 1037211 (526.0 / 169.0) 1281698	(10.58, 1.00) (-0.01, N/A, 0.8)	3576.3 2426.1	1.2357 98.8 98.8	3.9057	N/A			
NMeFOSAA	(570.0 / 419.0) 157034 (570.0 / 483.0) 74675	(7.73, 1.00) (0.00, N/A, 0.2)	6623.1 275.0	0.4755 102.7 102.7	0.9200	N/A			
NEtFOSAA	(584.0 / 419.0) 129346 (584.0 / 526.0) 87052	(7.98, 1.00) (0.01, N/A, 0.0)	222.5 2988.3	0.6730 110.2 110.2	0.9776	N/A			
NMeFOSE	(616.0 / 59.0) 434620	(10.35, 1.00) (0.01, N/A, 0.0)	831.6	N/A 0.0 0.0	3.7266	N/A			
NEtFOSE	(630.0 / 59.0) 528485	(10.54, 1.00) (0.01, N/A, 0.0)	566.1	N/A 0.0 0.0	3.8516	N/A			
HFPO-DA	(285.0 / 169.0) 271190 (285.0 / 185.0) 750974	(5.43, 1.00) (0.00, N/A, 0.1)	1918.3 2061.5	2.7692 106.4 106.4	1.9169	N/A			
ADONA	(377.0 / 85.0) 980338 (377.0 / 251.0) 94489	(6.04, 1.11) (N/A, 0.01, 0.0)	2956.3 690.5	0.0964 97.1 97.1	1.9395	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) 2901257 (533.0 / 353.0) 849857	(8.18, 1.51) (N/A, 0.01, -0.1)	4146.8 1496.2	0.2929 100.9 100.9	1.9064	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) 1788639 (633.0 / 453.0) 605395	(8.92, 1.64) (N/A, 0.00, 0.0)	4105.3 1986.2	0.3385 101.0 101.0	1.9884	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) 31923 (241.0 / 117.0) 57777	(4.07, 0.94) (N/A, 0.01, 0.1)	45.4 33.9	1.8099 109.6 109.6	3.7739	N/A			
5:3FTCA	(341.0 / 236.7) 168805 (341.0 / 217.0) 314305	(5.64, 1.09) (N/A, 0.01, -0.4)	876.2 627.2	1.8619 118.7 118.7	3.6906	N/A			
7:3FTCA	(441.0 / 317.0) 301119 (441.0 / 337.0) 237525	(6.96, 1.34) (N/A, 0.00, 0.2)	1111.9 1271.2	0.7888 91.6 91.6	3.7594	N/A			
PFEESA	(315.0 / 135.0) 622221 (315.0 / 83.0) 159758	(5.48, 1.06) (N/A, 0.01, 0.1)	2099.5 574.9	0.2568 105.2 105.2	1.6997	N/A			
PFMPA	(229.0 / 85.0) 95939	(3.82, 0.88) (N/A, 0.01, 0.0)	2123.3	N/A 0.0 0.0	1.9516	N/A			
PFMBA	(279.0 / 85.0) 342790	(4.60, 1.06) (N/A, 0.00, 0.0)	1773.2	N/A 0.0 0.0	1.9044	N/A			
NFDHA	(295.0 / 201.0) 295082 (295.0 / 85.0) 299968	(5.10, 0.98) (N/A, 0.01, 0.1)	28101.8 2129.4	1.0166 103.8 103.8	1.9837	N/A			
TDCA	(499.0 / 80.0) 826892	(7.75, 1.00) (N/A, 0.01, 0.0)	9118.0	N/A 0.0 0.0	1.0078	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 130016	(3.47, N/A) (N/A, 0.01, N/A)	1580.3	N/A	1.0665 [1.0000]	106.7% { 108.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 198753	(5.19, N/A) (N/A, 0.01, N/A)	2613.8	N/A	0.9799 [1.0000]	98.0% { 101.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 327717	(6.41, N/A) (N/A, 0.01, N/A)	2974.1	N/A	1.0312 [1.0000]	103.1% { 101.7% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 306882	(7.02, N/A) (N/A, 0.00, N/A)	1860.1	N/A	1.0111 [1.0000]	101.1% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 318091	(7.59, N/A) (N/A, 0.01, N/A)	3767083.7	N/A	0.9803 [1.0000]	98.0% { 103.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 480849	(6.49, N/A) (N/A, 0.01, N/A)	9017932.0	N/A	1.0737 [1.0000]	107.4% { 116.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 697914	(7.75, N/A) (N/A, 0.01, N/A)	1917.1	N/A	1.0262 [1.0000]	102.6% { 107.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1150572	(3.47, N/A) (N/A, 0.02, N/A)	5792.9	N/A	8.3466 [8.0000]	104.3% { 110.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 960849	(4.33, N/A) (N/A, 0.00, N/A)	3282.8	N/A	4.3160 [4.0000]	107.9% { 107.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 603352	(5.19, N/A) (N/A, 0.01, N/A)	2581.2	N/A	2.1417 [2.0000]	107.1% { 103.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 526960	(5.82, N/A) (N/A, 0.01, N/A)	4838.0	N/A	2.1415 [2.0000]	107.1% { 107.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 662589	(6.41, N/A) (N/A, 0.01, N/A)	3543.7	N/A	2.0484 [2.0000]	102.4% { 107.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 292291	(7.02, N/A) (N/A, 0.00, N/A)	448.0	N/A	1.0138 [1.0000]	101.4% { 97.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 375309	(7.59, N/A) (N/A, 0.01, N/A)	24044.0	N/A	1.0517 [1.0000]	105.2% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 341831	(8.12, N/A) (N/A, 0.01, N/A)	2432.3	N/A	1.0319 [1.0000]	103.2% { 94.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 294904	(8.59, N/A) (N/A, 0.01, N/A)	3153.6	N/A	1.0398 [1.0000]	104.0% { 102.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 289735	(9.06, N/A) (N/A, 0.00, N/A)	1394.5	N/A	1.0833 [1.0000]	108.3% { 96.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1445679	(5.13, N/A) (N/A, 0.01, N/A)	2767.0	N/A	1.9150 [2.0000]	95.8% { 103.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 811860	(6.49, N/A) (N/A, 0.01, N/A)	2345.4	N/A	1.8317 [2.0000]	91.6% { 100.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1684833	(7.75, N/A) (N/A, 0.01, N/A)	2311.1	N/A	1.9926 [2.0000]	99.6% { 101.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 264182	(4.95, N/A) (N/A, 0.01, N/A)	855.3	N/A	3.8854 [4.0000]	97.1% { 106.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 296953	(6.18, N/A) (N/A, 0.01, N/A)	3922.9	N/A	3.8265 [4.0000]	95.7% { 101.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 350936	(7.35, N/A) (N/A, 0.01, N/A)	1589.0	N/A	3.4158 [4.0000]	85.4% { 97.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2859807	(9.75, N/A) (N/A, 0.00, N/A)	3532.2	N/A	2.0835 [2.0000]	104.2% { 110.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 587586	(10.41, N/A) (N/A, 0.00, N/A)	2104.6	N/A	2.0061 [2.0000]	100.3% { 113.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 505573	(10.59, N/A) (N/A, 0.00, N/A)	2773.0	N/A	2.0920 [2.0000]	104.6% { 109.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 803262	(7.72, N/A) (N/A, 0.01, N/A)	1746.8	N/A	4.4325 [4.0000]	110.8% { 119.4% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 598291	(7.97, N/A) (N/A, 0.01, N/A)	3868.6	N/A	4.0250 [4.0000]	100.6% { 111.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2136456	(10.34, N/A) (N/A, 0.00, N/A)	1870.1	N/A	21.9709 [20.0000]	109.9% { 111.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2786559	(10.53, N/A) (N/A, 0.00, N/A)	2233.7	N/A	21.6815 [20.0000]	108.4% { 110.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1340152	(5.43, N/A) (N/A, 0.01, N/A)	3091.9	N/A	8.4325 [8.0000]	105.4% { 103.9% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (4)
 Acquired: 2023/04/12 - 10:51

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	(213.0 / 169.0) 997877	(3.46, 1.00) (0.00, N/A, 0.0)	182.7	N/A 0.0 0.0	8.1524	N/A			
PFPeA	(263.0 / 219.0) 864013 (263.0 / 69.0) 9910	(4.32, 1.00) (0.00, N/A, -0.2)	1868.4 146.8	0.0115 87.4 87.4	3.8766	N/A			
PFHxA	(313.0 / 269.0) 567697 (313.0 / 119.0) 61210	(5.19, 1.00) (0.00, N/A, 0.2)	578.3 879.4	0.1078 98.8 98.8	1.9924	N/A			
PFHpA	(363.0 / 319.0) 472790 (363.0 / 169.0) 148024	(5.81, 1.00) (0.00, N/A, -0.1)	4074.7 412835.6	0.3131 102.6 102.6	1.9964	N/A			
PFOA	(413.0 / 369.0) 602693 (413.0 / 169.0) 197268	(6.42, 1.00) (0.00, N/A, 0.0)	1085.8 1964.9	0.3273 104.6 104.6	1.9825	N/A			
PFNA	(463.0 / 419.0) 527908 (463.0 / 169.0) 124350	(7.03, 1.00) (0.00, N/A, 0.0)	60837.2 23365.6	0.2356 110.3 110.3	1.8404	N/A			
PFDA	(513.0 / 469.0) 700250 (513.0 / 169.0) 80392	(7.59, 1.00) (0.00, N/A, 0.1)	1970.5 16966.8	0.1148 100.1 100.1	2.0229	N/A			
PFUnA	(563.0 / 519.0) 592418 (563.0 / 169.0) 79922	(8.12, 1.00) (0.00, N/A, 0.0)	1635.0 5129.1	0.1349 114.2 114.2	1.8896	N/A			
PFDoA	(613.0 / 569.0) 505208 (613.0 / 169.0) 85032	(8.59, 1.00) (0.00, N/A, 0.0)	1964.1 1478.9	0.1683 98.2 98.2	2.0049	N/A			
PFTrDA	(663.0 / 619.0) 482184 (663.0 / 169.0) 119611	(8.87, 1.03) (N/A, 0.00, -0.1)	1491.0 1365.0	0.2481 100.1 100.1	2.1002	N/A			
PFTeDA	(713.0 / 669.0) 499584 (713.0 / 169.0) 111294	(9.06, 1.00) (0.00, N/A, 0.0)	2100.8 795.1	0.2228 110.5 110.5	2.1909	N/A			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (4)
 Acquired: 2023/04/12 - 10:51

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
PFBS	(299.0 / 80.0) 932707 (299.0 / 99.0) 562051	(5.13, 1.00) (0.00, N/A, 0.0)	71749.2 4807.5	0.6026 93.7 93.7	1.8264	N/A			
PFPeS	(349.0 / 80.0) 1558755 (349.0 / 99.0) 554754	(5.83, 0.90) (N/A, 0.01, -0.2)	11930.6 13158.4	0.3559 105.0 105.0	2.0087	N/A			
PFHxS	(399.0 / 80.0) 1171123 (399.0 / 99.0) 431115	(6.50, 1.00) (0.00, N/A, 0.1)	14545.1 2753.5	0.3681 106.3 106.3	1.7711	N/A			
PFHpS	(449.0 / 80.0) 1346095 (449.0 / 99.0) 394836	(7.16, 0.92) (N/A, 0.02, 0.0)	6876.0 12509643.2	0.2933 105.7 105.7	2.0015	N/A			
PFOS	(499.0 / 80.0) 1681429 (499.0 / 99.0) 393530	(7.75, 1.00) (0.00, N/A, 0.1)	789.7 947.5	0.2340 104.6 104.6	1.7814	N/A			
PFNS	(549.0 / 80.0) 1778208 (549.0 / 99.0) 409370	(8.31, 1.07) (N/A, 0.00, 0.0)	40208.8 3515.8	0.2302 95.1 95.1	2.0160	N/A			
PFDS	(599.0 / 80.0) 1986445 (599.0 / 99.0) 449452	(8.72, 1.13) (N/A, 0.00, 0.1)	9052.7 4035.4	0.2263 101.0 101.0	1.9922	N/A			
PFDoS	(699.0 / 80.0) 1447002 (699.0 / 99.0) 345295	(9.13, 1.18) (N/A, 0.01, 0.1)	2911.3 1732.6	0.2386 99.7 99.7	1.8865	N/A			
4:2FTS	(327.0 / 307.0) 1324214 (327.0 / 81.0) 866351	(4.95, 1.00) (0.00, N/A, -0.1)	3650.7 1270.7	0.6542 96.2 96.2	7.9132	N/A			
6:2FTS	(427.0 / 407.0) 868898 (427.0 / 81.0) 587639	(6.18, 1.00) (0.00, N/A, 0.0)	3108.9 1828.9	0.6763 96.0 96.0	7.7788	N/A			
8:2FTS	(527.0 / 507.0) 991356 (527.0 / 81.0) 745638	(7.35, 1.00) (0.00, N/A, 0.0)	4740.7 2261.1	0.7521 111.3 111.3	7.3586	N/A			

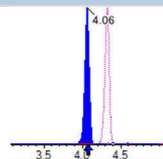
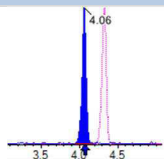
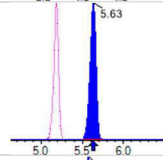
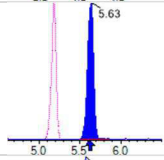
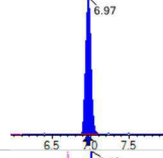
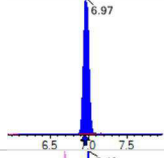
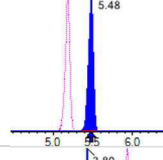
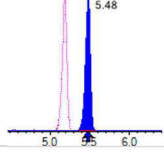
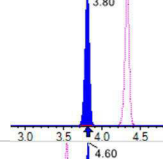
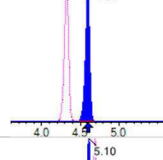
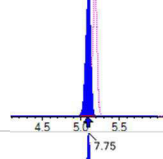
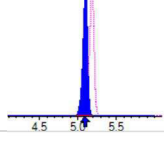
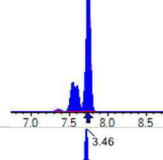
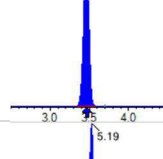
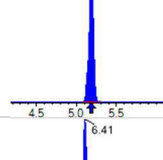
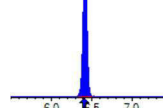


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (4)
 Acquired: 2023/04/12 - 10:51

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
PFOSA	(498.0 / 78.0) 2419995 (498.0 / 478.0) 62805	(9.75, 1.00) (0.00, N/A, 0.0)	4359.0 812.9	0.0260 104.8 104.8	1.9995	N/A			
NMeFOSA	(512.0 / 219.0) 1939180 (512.0 / 169.0) 1690729	(10.41, 1.00) (0.00, N/A, 1.1)	4091.1 4167.1	0.8719 100.5 100.5	8.5818	N/A			
NEtFOSA	(526.0 / 219.0) 1974250 (526.0 / 169.0) 2500436	(10.59, 1.00) (-0.01, N/A, 0.9)	5200.8 4706.8	1.2665 101.3 101.3	8.0650	N/A			
NMeFOSAA	(570.0 / 419.0) 308771 (570.0 / 483.0) 132012	(7.72, 1.00) (0.00, N/A, -0.2)	206894.3 297.4	0.4275 92.3 92.3	2.1469	N/A			
NEtFOSAA	(584.0 / 419.0) 279848 (584.0 / 526.0) 147534	(7.98, 1.00) (0.01, N/A, 0.0)	538.1 1514.4	0.5272 86.4 86.4	2.3076	N/A			
NMeFOSE	(616.0 / 59.0) 838535	(10.35, 1.00) (0.01, N/A, 0.0)	1186.7	N/A 0.0 0.0	8.1396	N/A			
NEtFOSE	(630.0 / 59.0) 995393	(10.54, 1.00) (0.01, N/A, 0.0)	905.2	N/A 0.0 0.0	8.0774	N/A			
HFPO-DA	(285.0 / 169.0) 576750 (285.0 / 185.0) 1577533	(5.43, 1.00) (0.00, N/A, -0.1)	1690.3 3687.8	2.7352 105.1 105.1	4.2785	N/A			
ADONA	(377.0 / 85.0) 2009979 (377.0 / 251.0) 187204	(6.04, 1.11) (N/A, 0.01, -0.3)	3802.7 1205.0	0.0931 93.8 93.8	4.1732	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 5889069 (533.0 / 353.0) 1728749	(8.17, 1.51) (N/A, 0.00, -0.1)	4302.9 2749.5	0.2936 101.1 101.1	4.0611	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 3410068 (633.0 / 453.0) 1157721	(8.91, 1.64) (N/A, 0.00, 0.1)	3846.8 4302.7	0.3395 101.3 101.3	3.9784	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) 63574 (241.0 / 117.0) 115435	(4.06, 0.94) (N/A, 0.00, -0.1)	56.3 44.2	1.8157 110.0 110.0	7.7844	N/A			
5:3FTCA	(341.0 / 236.7) 356128 (341.0 / 217.0) 609235	(5.63, 1.09) (N/A, 0.01, 0.0)	1065.4 736.4	1.7107 109.1 109.1	7.9522	N/A			
7:3FTCA	(441.0 / 317.0) 596696 (441.0 / 337.0) 512310	(6.97, 1.34) (N/A, 0.01, -0.1)	994.9 1308.6	0.8586 99.7 99.7	7.6086	N/A			
PFEESA	(315.0 / 135.0) 1302128 (315.0 / 83.0) 339684	(5.48, 1.06) (N/A, 0.01, 0.0)	6510.6 1244.1	0.2609 106.9 106.9	3.6330	N/A			
PFMPA	(229.0 / 85.0) 199588	(3.80, 0.88) (N/A, 0.00, 0.0)	2648.6	N/A 0.0 0.0	4.2052	N/A			
PFMBA	(279.0 / 85.0) 729476	(4.60, 1.06) (N/A, 0.00, 0.0)	2706.0	N/A 0.0 0.0	4.1976	N/A			
NFDHA	(295.0 / 201.0) 591876 (295.0 / 85.0) 618558	(5.10, 0.98) (N/A, 0.01, 0.0)	2964.8 2543.0	1.0451 106.7 106.7	4.0639	N/A			
TDCA	(499.0 / 80.0) 1608638	(7.75, 1.00) (N/A, 0.01, 0.0)	15244.9	N/A 0.0 0.0	1.9802	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 139297	(3.46, N/A) (N/A, 0.00, N/A)	1548.9	N/A	1.1426 [1.0000]	114.3% { 116.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 216976	(5.19, N/A) (N/A, 0.01, N/A)	2067.6	N/A	1.0698 [1.0000]	107.0% { 110.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 338606	(6.41, N/A) (N/A, 0.01, N/A)	7036.5	N/A	1.0655 [1.0000]	106.5% { 105.0% }			

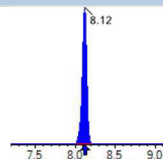
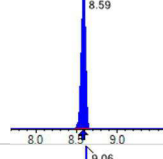
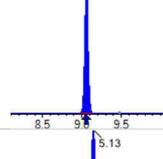
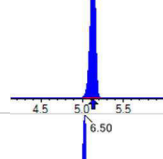
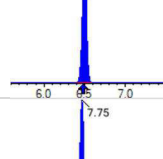
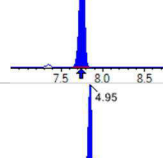
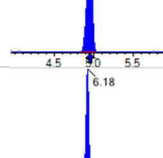
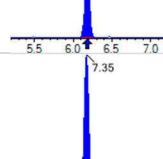
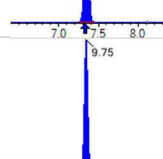
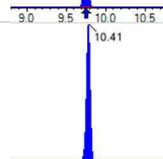
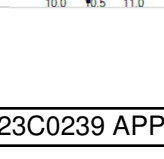


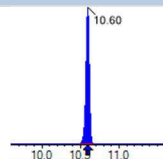
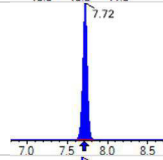
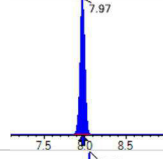
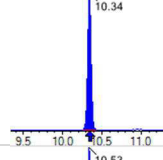
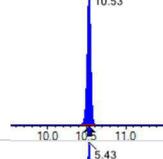
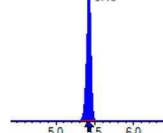
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (4)
 Acquired: 2023/04/12 - 10:51

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
13C5_PFNA_IIS	(468.0 / 423.0) 307299	(7.03, N/A) (N/A, 0.01, N/A)	1805.4	N/A	1.0125 [1.0000]	101.3% {100.1%}			
13C2_PFDA_IIS	(515.0 / 470.1) 334848	(7.59, N/A) (N/A, 0.01, N/A)	337.3	N/A	1.0320 [1.0000]	103.2% {109.3%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 459265	(6.50, N/A) (N/A, 0.01, N/A)	7549.7	N/A	1.0255 [1.0000]	102.5% {111.2%}			
13C4_PFOS_IIS	(503.0 / 79.9) 734233	(7.75, N/A) (N/A, 0.01, N/A)	2189.7	N/A	1.0796 [1.0000]	108.0% {113.5%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1120613	(3.46, N/A) (N/A, 0.00, N/A)	5048.0	N/A	7.5876 [8.0000]	94.8% {107.2%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 927683	(4.32, N/A) (N/A, -0.01, N/A)	2985.8	N/A	3.8170 [4.0000]	95.4% {103.4%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 590745	(5.18, N/A) (N/A, 0.01, N/A)	3064.0	N/A	1.9208 [2.0000]	96.0% {101.0%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 549482	(5.81, N/A) (N/A, 0.01, N/A)	2570.7	N/A	2.0455 [2.0000]	102.3% {112.1%}			
13C8_PFOA_EIS	(421.0 / 376.0) 644833	(6.41, N/A) (N/A, 0.01, N/A)	4848.1	N/A	1.9294 [2.0000]	96.5% {104.9%}			
13C9_PFNA_EIS	(472.0 / 427.0) 310988	(7.03, N/A) (N/A, 0.01, N/A)	2212.1	N/A	1.0772 [1.0000]	107.7% {103.9%}			
13C6_PFDA_EIS	(519.0 / 474.0) 368275	(7.59, N/A) (N/A, 0.01, N/A)	1932.8	N/A	0.9804 [1.0000]	98.0% {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
13C7_PFUa_EIS	(570.0 / 525.0) 356326	(8.12, N/A) (N/A, 0.00, N/A)	2830.0	N/A	1.0219 [1.0000]	102.2% { 98.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 277837	(8.59, N/A) (N/A, 0.00, N/A)	3029.2	N/A	0.9306 [1.0000]	93.1% { 96.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 248806	(9.06, N/A) (N/A, 0.00, N/A)	1060.9	N/A	0.8837 [1.0000]	88.4% { 82.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1431933	(5.13, N/A) (N/A, 0.01, N/A)	3380.6	N/A	1.9859 [2.0000]	99.3% { 102.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 841145	(6.50, N/A) (N/A, 0.01, N/A)	2307.4	N/A	1.9870 [2.0000]	99.3% { 104.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1668117	(7.75, N/A) (N/A, 0.01, N/A)	1790.3	N/A	1.8753 [2.0000]	93.8% { 100.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 225417	(4.95, N/A) (N/A, 0.00, N/A)	886.8	N/A	3.4711 [4.0000]	86.8% { 90.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 261090	(6.18, N/A) (N/A, 0.01, N/A)	1413.6	N/A	3.5225 [4.0000]	88.1% { 89.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 381946	(7.35, N/A) (N/A, 0.02, N/A)	3695.7	N/A	3.8924 [4.0000]	97.3% { 106.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2762714	(9.75, N/A) (N/A, 0.00, N/A)	4685.1	N/A	1.9132 [2.0000]	95.7% { 106.3% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 544667	(10.41, N/A) (N/A, 0.00, N/A)	3146.4	N/A	1.7676 [2.0000]	88.4% { 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
D5_NEiFOSA_EIS	(531.0 / 169.0) 466030	(10.60, N/A) (N/A, 0.00, N/A)	3096.8	N/A	1.8330 [2.0000]	91.7% { 101.3% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 676813	(7.72, N/A) (N/A, 0.01, N/A)	13098.3	N/A	3.5500 [4.0000]	88.7% { 100.6% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 548388	(7.97, N/A) (N/A, 0.00, N/A)	5360.2	N/A	3.5068 [4.0000]	87.7% { 102.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1887213	(10.34, N/A) (N/A, 0.00, N/A)	1264.5	N/A	18.4477 [20.0000]	92.2% { 98.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2502644	(10.53, N/A) (N/A, 0.00, N/A)	1968.5	N/A	18.5092 [20.0000]	92.5% { 99.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1276999	(5.43, N/A) (N/A, 0.01, N/A)	2391.3	N/A	7.3603 [8.0000]	92.0% { 99.0% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (5)
 Acquired: 2023/04/12 - 11:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2320449	(3.46, 1.00) (0.00, N/A, 0.0)	190.5	N/A 0.0 0.0	20.3252	N/A			
PFPeA	(263.0 / 219.0) 2105536 (263.0 / 69.0) 27645	(4.33, 1.00) (0.00, N/A, -0.1)	2719.6 363.2	0.0131 100.0 100.0	9.7693	N/A			
PFHxA	(313.0 / 269.0) 1320877 (313.0 / 119.0) 144147	(5.17, 1.00) (0.00, N/A, 0.2)	1292.3 4465.8	0.1091 100.0 100.0	4.6840	N/A			
PFHpA	(363.0 / 319.0) 1093207 (363.0 / 169.0) 333754	(5.80, 1.00) (0.00, N/A, -0.1)	4829.6 46532.1	0.3053 100.0 100.0	5.1762	N/A			
PFOA	(413.0 / 369.0) 1459488 (413.0 / 169.0) 456884	(6.40, 1.00) (0.00, N/A, 0.0)	2025.7 87664.8	0.3130 100.0 100.0	5.0383	N/A			
PFNA	(463.0 / 419.0) 1312668 (463.0 / 169.0) 280290	(7.01, 1.00) (0.00, N/A, 0.0)	171692.5 29003.0	0.2135 100.0 100.0	4.7543	N/A			
PFDA	(513.0 / 469.0) 1742779 (513.0 / 169.0) 199783	(7.58, 1.00) (0.00, N/A, 0.1)	2127.9 3714634.4	0.1146 100.0 100.0	5.1535	N/A			
PFUnA	(563.0 / 519.0) 1487506 (563.0 / 169.0) 175790	(8.12, 1.00) (0.00, N/A, 0.5)	3170.0 203146.9	0.1182 100.0 100.0	4.6861	N/A			
PFDoA	(613.0 / 569.0) 1236883 (613.0 / 169.0) 211978	(8.59, 1.00) (0.00, N/A, 0.0)	3122.0 1830.7	0.1714 100.0 100.0	4.7494	N/A			
PFTTrDA	(663.0 / 619.0) 1175635 (663.0 / 169.0) 291337	(8.86, 1.03) (N/A, 0.00, 0.0)	3857.6 2427.2	0.2478 100.0 100.0	4.9546	N/A			
PFTeDA	(713.0 / 669.0) 1226134 (713.0 / 169.0) 247092	(9.05, 1.00) (0.00, N/A, -0.2)	2739.3 1112.9	0.2015 100.0 100.0	4.4380	N/A			



Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL5
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
Path: S2023-04-12A (5)
Acquired: 2023/04/12 - 11:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2197574 (299.0 / 99.0) 1412848	(5.13, 1.00) (0.00, N/A, 0.0)	9266.6 6185.0	0.6429 100.0 100.0	4.4173	N/A			
PFPeS	(349.0 / 80.0) 3715977 (349.0 / 99.0) 1259977	(5.82, 0.90) (N/A, 0.00, 0.0)	191890.6 81660.5	0.3391 100.0 100.0	4.9976	N/A			
PFHxS	(399.0 / 80.0) 2943855 (399.0 / 99.0) 1019531	(6.49, 1.00) (0.00, N/A, 0.0)	23202.8 3676.0	0.3463 100.0 100.0	4.6463	N/A			
PFHpS	(449.0 / 80.0) 3197307 (449.0 / 99.0) 886968	(7.14, 0.92) (N/A, 0.00, 0.0)	378884.0 5326.6	0.2774 100.0 100.0	4.7589	N/A			
PFOS	(499.0 / 80.0) 4263526 (499.0 / 99.0) 954029	(7.75, 1.00) (0.00, N/A, 0.1)	1679.0 1691.4	0.2238 100.0 100.0	4.5217	N/A			
PFNS	(549.0 / 80.0) 4329476 (549.0 / 99.0) 1047787	(8.30, 1.07) (N/A, 0.00, -0.1)	60400.1 5929.8	0.2420 100.0 100.0	4.9135	N/A			
PFDS	(599.0 / 80.0) 4840203 (599.0 / 99.0) 1084511	(8.72, 1.13) (N/A, 0.00, -0.1)	7178.7 37340.2	0.2241 100.0 100.0	4.8591	N/A			
PFDoS	(699.0 / 80.0) 3581980 (699.0 / 99.0) 857308	(9.13, 1.18) (N/A, 0.00, 0.0)	4056.3 2638.7	0.2393 100.0 100.0	4.6747	N/A			
4:2FTS	(327.0 / 307.0) 3580637 (327.0 / 81.0) 2434434	(4.95, 1.00) (0.00, N/A, 0.1)	4107.0 2104.8	0.6799 100.0 100.0	19.3489	N/A			
6:2FTS	(427.0 / 407.0) 2381613 (427.0 / 81.0) 1677336	(6.18, 1.00) (0.00, N/A, 0.0)	3914.2 2876.3	0.7043 100.0 100.0	19.0155	N/A			
8:2FTS	(527.0 / 507.0) 2568872 (527.0 / 81.0) 1735890	(7.33, 1.00) (0.00, N/A, 0.0)	4608.1 3530.1	0.6757 100.0 100.0	20.2902	N/A			

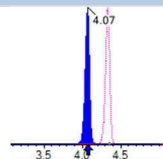
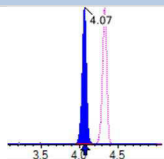
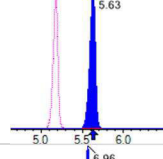
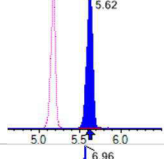
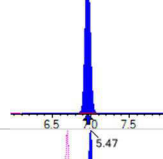
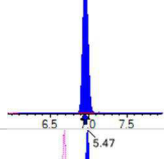
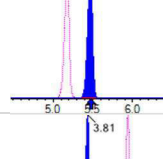
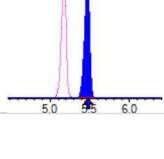
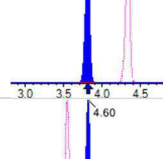
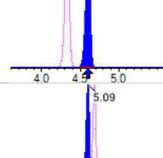
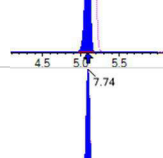
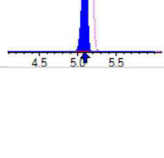
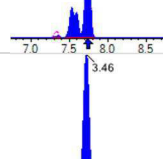
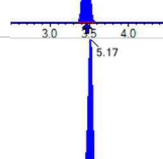
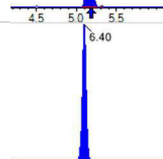
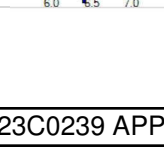


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (5)
 Acquired: 2023/04/12 - 11:04

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) 5956235 (498.0 / 478.0) 147480	(9.75, 1.00) (0.00, N/A, -0.1)	6488.3 971.7	0.0248 100.0 100.0	5.2324	N/A			
NMeFOSA	(512.0 / 219.0) 4723945 (512.0 / 169.0) 4098097	(10.41, 1.00) (0.00, N/A, 1.4)	6007.4 6227.7	0.8675 100.0 100.0	21.8992	N/A			
NEtFOSA	(526.0 / 219.0) 5044008 (526.0 / 169.0) 6305914	(10.59, 1.00) (-0.01, N/A, 1.0)	7194.5 6220.8	1.2502 100.0 100.0	20.8655	N/A			
NMeFOSAA	(570.0 / 419.0) 744811 (570.0 / 483.0) 345027	(7.72, 1.00) (0.01, N/A, 0.2)	2713.9 343.0	0.4632 100.0 100.0	5.2097	N/A			
NEtFOSAA	(584.0 / 419.0) 598808 (584.0 / 526.0) 365558	(7.97, 1.00) (0.01, N/A, 0.0)	9177.6 1227.1	0.6105 100.0 100.0	5.0437	N/A			
NMeFOSE	(616.0 / 59.0) 2095449	(10.35, 1.00) (0.01, N/A, 0.0)	2102.7	N/A 0.0 0.0	20.0939	N/A			
NEtFOSE	(630.0 / 59.0) 2549217	(10.54, 1.00) (0.01, N/A, 0.0)	1031.8	N/A 0.0 0.0	20.5185	N/A			
HFPO-DA	(285.0 / 169.0) 1461385 (285.0 / 185.0) 3801924	(5.42, 1.00) (0.00, N/A, 0.0)	2986.8 4098.0	2.6016 100.0 100.0	10.7279	N/A			
ADONA	(377.0 / 85.0) 4619119 (377.0 / 251.0) 458478	(6.03, 1.11) (N/A, 0.00, -0.1)	3418.0 4047.5	0.0993 100.0 100.0	9.4904	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 13838069 (533.0 / 353.0) 4018484	(8.17, 1.51) (N/A, 0.00, 0.1)	4746.1 3832.0	0.2904 100.0 100.0	9.4434	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 8662384 (633.0 / 453.0) 2903433	(8.91, 1.65) (N/A, 0.00, 0.0)	5334.0 3741.5	0.3352 100.0 100.0	10.0007	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) 156445 (241.0 / 117.0) 258318	(4.07, 0.94) (N/A, 0.00, 0.1)	71.8 56.4	1.6512 100.0 100.0	19.8096	N/A			
5:3FTCA	(341.0 / 236.7) 931064 (341.0 / 217.0) 1460507	(5.63, 1.09) (N/A, 0.00, 0.2)	1287.4 1384.4	1.5686 100.0 100.0	21.0067	N/A			
7:3FTCA	(441.0 / 317.0) 1453989 (441.0 / 337.0) 1252365	(6.96, 1.34) (N/A, 0.00, 0.1)	1835.6 1657.8	0.8613 100.0 100.0	18.7331	N/A			
PFEESA	(315.0 / 135.0) 3120890 (315.0 / 83.0) 761522	(5.47, 1.06) (N/A, 0.00, -0.1)	2732.9 1380.5	0.2440 100.0 100.0	8.7979	N/A			
PFMPA	(229.0 / 85.0) 490395	(3.81, 0.88) (N/A, 0.00, 0.0)	6106.9	N/A 0.0 0.0	10.6847	N/A			
PFMBA	(279.0 / 85.0) 1749289	(4.60, 1.06) (N/A, 0.00, 0.0)	4208.5	N/A 0.0 0.0	10.4093	N/A			
NFDHA	(295.0 / 201.0) 1519489 (295.0 / 85.0) 1488260	(5.09, 0.98) (N/A, 0.00, 0.0)	2632.9 1925.7	0.9794 100.0 100.0	10.5417	N/A			
TDCA	(499.0 / 80.0) 3846263	(7.74, 1.00) (N/A, 0.00, 0.0)	23403.9	N/A 0.0 0.0	4.7394	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 119683	(3.46, N/A) (N/A, 0.00, N/A)	1300.3	N/A	0.9817 [1.0000]	98.2% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 196726	(5.17, N/A) (N/A, 0.00, N/A)	4098.7	N/A	0.9699 [1.0000]	97.0% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 322339	(6.40, N/A) (N/A, 0.00, N/A)	10107.1	N/A	1.0143 [1.0000]	101.4% { 100.0% }			

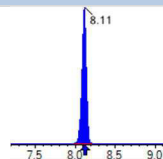
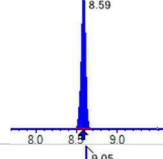
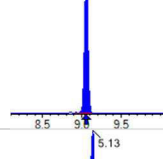
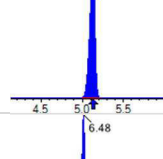
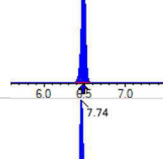
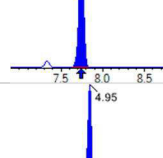
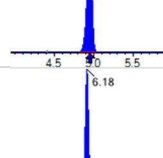
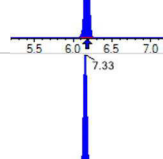
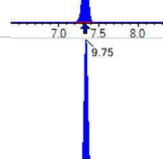
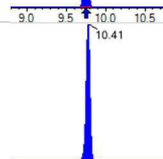
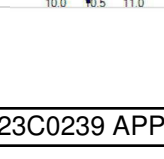


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (5)
 Acquired: 2023/04/12 - 11:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 306977	(7.01, N/A) (N/A, 0.00, N/A)	48619.7	N/A	1.0115 [1.0000]	101.1% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 306227	(7.58, N/A) (N/A, 0.00, N/A)	2832.4	N/A	0.9438 [1.0000]	94.4% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 412970	(6.49, N/A) (N/A, 0.00, N/A)	1710.1	N/A	0.9221 [1.0000]	92.2% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 646927	(7.74, N/A) (N/A, 0.00, N/A)	2157.4	N/A	0.9513 [1.0000]	95.1% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1045207	(3.46, N/A) (N/A, 0.00, N/A)	5775.3	N/A	8.2368 [8.0000]	103.0% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 897081	(4.33, N/A) (N/A, 0.00, N/A)	3048.5	N/A	4.0711 [4.0000]	101.8% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 584661	(5.18, N/A) (N/A, 0.00, N/A)	3089.4	N/A	2.0967 [2.0000]	104.8% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 490028	(5.81, N/A) (N/A, 0.00, N/A)	1960.1	N/A	2.0119 [2.0000]	100.6% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 614459	(6.40, N/A) (N/A, 0.00, N/A)	2892.1	N/A	1.9313 [2.0000]	96.6% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 299336	(7.01, N/A) (N/A, 0.00, N/A)	5442.1	N/A	1.0379 [1.0000]	103.8% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 359785	(7.58, N/A) (N/A, 0.00, N/A)	2401.6	N/A	1.0473 [1.0000]	104.7% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 360770	(8.11, N/A) (N/A, 0.00, N/A)	2079.6	N/A	1.1313 [1.0000]	113.1% { 100.0% }			
13C2_PFDa_EIS	(615.0 / 570.0) 287142	(8.59, N/A) (N/A, 0.00, N/A)	2311.7	N/A	1.0516 [1.0000]	105.2% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 301454	(9.05, N/A) (N/A, 0.00, N/A)	1075.2	N/A	1.1708 [1.0000]	117.1% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1394957	(5.13, N/A) (N/A, 0.00, N/A)	2652.9	N/A	2.1515 [2.0000]	107.6% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 805972	(6.48, N/A) (N/A, 0.00, N/A)	3712.7	N/A	2.1173 [2.0000]	105.9% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1666405	(7.74, N/A) (N/A, 0.00, N/A)	1620.0	N/A	2.1262 [2.0000]	106.3% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 249277	(4.95, N/A) (N/A, 0.00, N/A)	1092.6	N/A	4.2688 [4.0000]	106.7% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 292750	(6.18, N/A) (N/A, 0.00, N/A)	1884.4	N/A	4.3924 [4.0000]	109.8% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 358942	(7.33, N/A) (N/A, 0.00, N/A)	3215.9	N/A	4.0680 [4.0000]	101.7% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2598438	(9.75, N/A) (N/A, 0.00, N/A)	2895.9	N/A	2.0423 [2.0000]	102.1% { 100.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 519955	(10.41, N/A) (N/A, 0.00, N/A)	2377.4	N/A	1.9151 [2.0000]	95.8% { 100.0% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (5)
 Acquired: 2023/04/12 - 11:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 460217	(10.59 , N/A) (N/A , 0.00 , N/A)	2334.3	N/A	2.0544 [2.0000]	102.7% { 100.0% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 672785	(7.71 , N/A) (N/A , 0.00 , N/A)	1519.0	N/A	4.0051 [4.0000]	100.1% { 100.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 536849	(7.97 , N/A) (N/A , 0.00 , N/A)	3127.1	N/A	3.8963 [4.0000]	97.4% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1910355	(10.34 , N/A) (N/A , 0.00 , N/A)	1515.0	N/A	21.1941 [20.0000]	106.0% { 100.0% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2523117	(10.53 , N/A) (N/A , 0.00 , N/A)	2447.9	N/A	21.1790 [20.0000]	105.9% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1290446	(5.42 , N/A) (N/A , 0.00 , N/A)	3323.1	N/A	8.2034 [8.0000]	102.5% { 100.0% }			

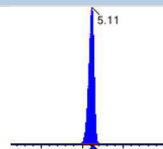
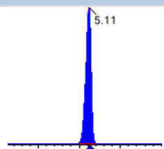
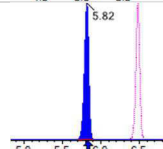
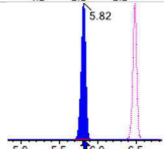
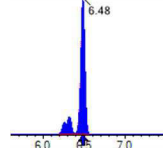
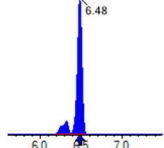
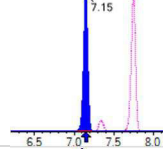
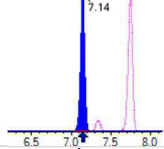
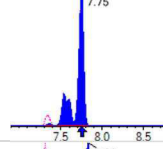
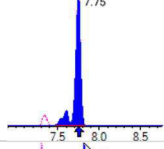
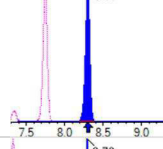
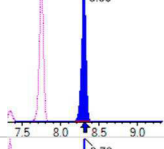
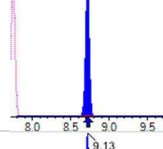
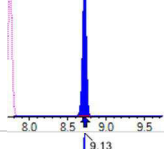
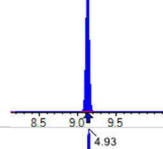
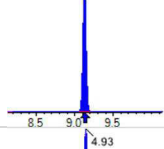
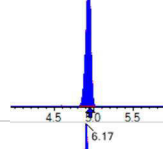
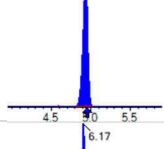
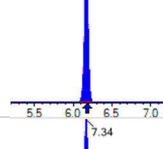
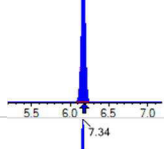
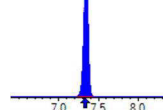
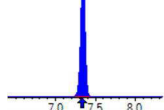


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (6)
 Acquired: 2023/04/12 - 11:16

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	(213.0 / 169.0) 4413238	(3.44, 1.00) (0.00, N/A, 0.0)	198.0	N/A 0.0 0.0	39.3595	N/A			
PFPeA	(263.0 / 219.0) 4213467 (263.0 / 69.0) 49283	(4.31, 1.00) (0.00, N/A, 0.0)	4110.6 694.8	0.0117 89.1 89.1	19.1101	N/A			
PFHxA	(313.0 / 269.0) 2653609 (313.0 / 119.0) 270477	(5.17, 1.00) (0.00, N/A, 0.0)	1929.8 1913.8	0.1019 93.4 93.4	9.3786	N/A			
PFHpA	(363.0 / 319.0) 2221271 (363.0 / 169.0) 700793	(5.80, 1.00) (0.00, N/A, 0.0)	5173.5 98980.5	0.3155 103.3 103.3	9.8949	N/A			
PFOA	(413.0 / 369.0) 2977033 (413.0 / 169.0) 956817	(6.40, 1.00) (0.00, N/A, 0.0)	3000.3 15136.2	0.3214 102.7 102.7	9.6693	N/A			
PFNA	(463.0 / 419.0) 2684895 (463.0 / 169.0) 597078	(7.01, 1.00) (0.00, N/A, -0.2)	7300.9 9700322.7	0.2224 104.1 104.1	10.6110	N/A			
PFDA	(513.0 / 469.0) 3542397 (513.0 / 169.0) 389129	(7.58, 1.00) (0.00, N/A, 0.1)	3116.4 14991.6	0.1098 95.8 95.8	9.2304	N/A			
PFUnA	(563.0 / 519.0) 3010650 (563.0 / 169.0) 336319	(8.11, 1.00) (0.00, N/A, 0.0)	3207.5 8133.1	0.1117 94.5 94.5	9.9525	N/A			
PFDoA	(613.0 / 569.0) 2571423 (613.0 / 169.0) 415561	(8.58, 1.00) (0.00, N/A, 0.0)	2976.4 3880.1	0.1616 94.3 94.3	8.8859	N/A			
PFTrDA	(663.0 / 619.0) 2380621 (663.0 / 169.0) 549850	(8.86, 1.03) (N/A, 0.00, -0.1)	4345.0 4671.5	0.2310 93.2 93.2	9.0292	N/A			
PFTeDA	(713.0 / 669.0) 2541738 (713.0 / 169.0) 492248	(9.05, 1.00) (0.00, N/A, 0.0)	3229.0 1444.7	0.1937 96.1 96.1	9.6890	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	(299.0 / 80.0) 4485638 (299.0 / 99.0) 2753650	(5.11, 1.00) (0.00, N/A, 0.0)	6833.8 6723.5	0.6139 95.5 95.5	8.5831	N/A			
PFPeS	(349.0 / 80.0) 7157621 (349.0 / 99.0) 2594810	(5.82, 0.90) (N/A, -0.01, 0.1)	65311.8 271652.5	0.3625 106.9 106.9	9.0781	N/A			
PFHxS	(399.0 / 80.0) 5977955 (399.0 / 99.0) 2071673	(6.48, 1.00) (0.00, N/A, 0.1)	7034.8 1901409.3	0.3466 100.1 100.1	8.8979	N/A			
PFHpS	(449.0 / 80.0) 6519526 (449.0 / 99.0) 1840537	(7.15, 0.92) (N/A, 0.01, 0.0)	403632.2 9814.5	0.2823 101.8 101.8	9.5942	N/A			
PFOS	(499.0 / 80.0) 8566440 (499.0 / 99.0) 1922105	(7.75, 1.00) (0.00, N/A, 0.1)	1781.4 2488.2	0.2244 100.3 100.3	8.9828	N/A			
PFNS	(549.0 / 80.0) 8818321 (549.0 / 99.0) 2127916	(8.30, 1.07) (N/A, 0.00, 0.0)	15240.9 2196097.0	0.2413 99.7 99.7	9.8949	N/A			
PFDS	(599.0 / 80.0) 9668662 (599.0 / 99.0) 2174592	(8.72, 1.13) (N/A, 0.00, 0.0)	10242.9 9999.7	0.2249 100.4 100.4	9.5970	N/A			
PFDoS	(699.0 / 80.0) 7636022 (699.0 / 99.0) 1719647	(9.13, 1.18) (N/A, 0.00, 0.1)	5376.2 3307.7	0.2252 94.1 94.1	9.8531	N/A			
4:2FTS	(327.0 / 307.0) 7197888 (327.0 / 81.0) 4496331	(4.93, 1.00) (0.00, N/A, 0.0)	3792.9 2906.5	0.6247 91.9 91.9	39.5056	N/A			
6:2FTS	(427.0 / 407.0) 4671416 (427.0 / 81.0) 3114289	(6.17, 1.00) (0.00, N/A, 0.0)	3812.3 4241.6	0.6667 94.7 94.7	35.9116	N/A			
8:2FTS	(527.0 / 507.0) 5170482 (527.0 / 81.0) 3737679	(7.34, 1.00) (0.00, N/A, 0.2)	4176.7 5169.5	0.7229 107.0 107.0	36.6329	N/A			

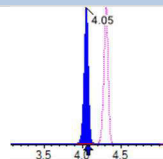
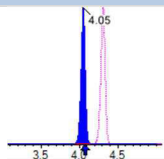
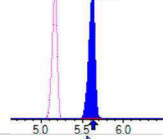
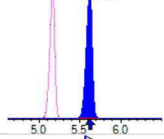
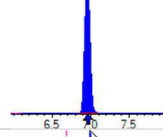
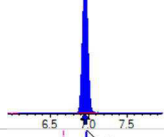
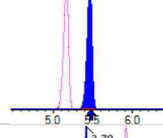
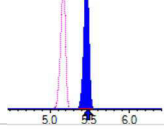
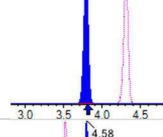
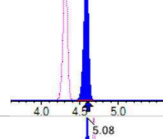
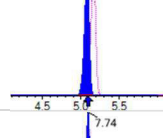
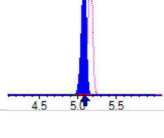
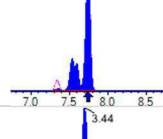
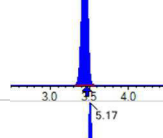
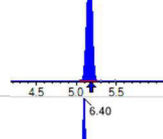
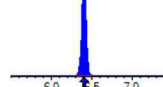


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (6)
 Acquired: 2023/04/12 - 11:16

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
PFOSA	(498.0 / 78.0) 12332842 (498.0 / 478.0) 279225	(9.75, 1.00) (0.00, N/A, 0.0)	6964.3 1940.9	0.0226 91.4 91.4	9.9797	N/A			
NMeFOSA	(512.0 / 219.0) 9910834 (512.0 / 169.0) 8699182	(10.41, 1.00) (0.00, N/A, 1.3)	5445.8 4992.7	0.8777 101.2 101.2	39.0399	N/A			
NEtFOSA	(526.0 / 219.0) 10346391 (526.0 / 169.0) 13203304	(10.58, 1.00) (-0.01, N/A, 0.8)	6956.8 8453.9	1.2761 102.1 102.1	40.4083	N/A			
NMeFOSAA	(570.0 / 419.0) 1460799 (570.0 / 483.0) 689583	(7.72, 1.00) (0.00, N/A, 0.1)	3428.8 608.8	0.4721 101.9 101.9	8.8635	N/A			
NEtFOSAA	(584.0 / 419.0) 1253982 (584.0 / 526.0) 737571	(7.97, 1.00) (0.00, N/A, 0.0)	2970.1 8347229.9	0.5882 96.3 96.3	9.6822	N/A			
NMeFOSE	(616.0 / 59.0) 4539926	(10.35, 1.00) (0.01, N/A, 0.0)	3319.7	N/A 0.0 0.0	39.2817	N/A			
NEtFOSE	(630.0 / 59.0) 5452766	(10.54, 1.00) (0.01, N/A, 0.0)	1302.6	N/A 0.0 0.0	40.0180	N/A			
HFPO-DA	(285.0 / 169.0) 2733358 (285.0 / 185.0) 7614922	(5.41, 1.00) (0.00, N/A, 0.1)	2063.5 5026.5	2.7859 107.1 107.1	19.4488	N/A			
ADONA	(377.0 / 85.0) 9229894 (377.0 / 251.0) 941044	(6.02, 1.11) (N/A, -0.01, -0.1)	5464.0 1895.4	0.1020 102.7 102.7	18.3809	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 27143500 (533.0 / 353.0) 8426739	(8.16, 1.51) (N/A, 0.00, 0.1)	5847.2 3794.0	0.3105 106.9 106.9	17.9541	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 16115108 (633.0 / 453.0) 5601397	(8.91, 1.65) (N/A, 0.00, 0.0)	6662.3 6634.6	0.3476 103.7 103.7	18.0332	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) 318165 (241.0 / 117.0) 527361	(4.05, 0.94) (N/A, -0.01, 0.1)	79.6 74.1	1.6575 100.4 100.4	39.3808	N/A			
5:3FTCA	(341.0 / 236.7) 1806840 (341.0 / 217.0) 3076799	(5.62, 1.09) (N/A, -0.01, 0.0)	1861.2 1733.3	1.7029 108.6 108.6	40.6300	N/A			
7:3FTCA	(441.0 / 317.0) 2971733 (441.0 / 337.0) 2473862	(6.95, 1.35) (N/A, 0.00, 0.0)	1829.8 1956.0	0.8325 96.6 96.6	38.1600	N/A			
PFEESA	(315.0 / 135.0) 6258811 (315.0 / 83.0) 1514180	(5.46, 1.06) (N/A, -0.01, 0.2)	2788.9 2189.8	0.2419 99.1 99.1	17.5851	N/A			
PFMPA	(229.0 / 85.0) 892434	(3.79, 0.88) (N/A, -0.02, 0.0)	5958.5	N/A 0.0 0.0	19.0070	N/A			
PFMBA	(279.0 / 85.0) 3321752	(4.58, 1.06) (N/A, -0.02, 0.0)	4141.2	N/A 0.0 0.0	19.3217	N/A			
NFDHA	(295.0 / 201.0) 2811382 (295.0 / 85.0) 2883550	(5.08, 0.98) (N/A, -0.01, 0.0)	3490.4 2855.3	1.0257 104.7 104.7	19.4393	N/A			
TDCA	(499.0 / 80.0) 7527672	(7.74, 1.00) (N/A, 0.00, 0.0)	34769.6	N/A 0.0 0.0	9.1711	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 122377	(3.44, N/A) (N/A, -0.02, N/A)	1442.5	N/A	1.0038 [1.0000]	100.4% { 102.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 200114	(5.17, N/A) (N/A, -0.01, N/A)	1785.3	N/A	0.9866 [1.0000]	98.7% { 101.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 330519	(6.40, N/A) (N/A, 0.00, N/A)	21186.9	N/A	1.0400 [1.0000]	104.0% { 102.5% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (6)
 Acquired: 2023/04/12 - 11:16

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
13C5_PFNA_IIS	(468.0 / 423.0) 295167	(7.01, N/A) (N/A, 0.00, N/A)	6556.7	N/A	0.9725 [1.0000]	97.3% { 96.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 326906	(7.58, N/A) (N/A, 0.01, N/A)	16207.3	N/A	1.0075 [1.0000]	100.8% { 106.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 443471	(6.48, N/A) (N/A, 0.00, N/A)	2103.1	N/A	0.9902 [1.0000]	99.0% { 107.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 721906	(7.75, N/A) (N/A, 0.00, N/A)	1849.4	N/A	1.0615 [1.0000]	106.2% { 111.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1026535	(3.44, N/A) (N/A, -0.02, N/A)	5338.0	N/A	7.9116 [8.0000]	98.9% { 98.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 917723	(4.31, N/A) (N/A, -0.02, N/A)	3088.2	N/A	4.0942 [4.0000]	102.4% { 102.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 586617	(5.17, N/A) (N/A, -0.01, N/A)	1800.6	N/A	2.0681 [2.0000]	103.4% { 100.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 520851	(5.80, N/A) (N/A, -0.01, N/A)	2986.1	N/A	2.1023 [2.0000]	105.1% { 106.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 653078	(6.40, N/A) (N/A, 0.00, N/A)	2992.4	N/A	2.0019 [2.0000]	100.1% { 106.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 274321	(7.02, N/A) (N/A, 0.00, N/A)	5250.5	N/A	0.9892 [1.0000]	98.9% { 91.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 408297	(7.58, N/A) (N/A, 0.00, N/A)	7474.0	N/A	1.1133 [1.0000]	111.3% { 113.5% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (6)
 Acquired: 2023/04/12 - 11:16

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
13C7_PFUa_EIS	(570.0 / 525.0) 343809	(8.11, N/A) (N/A, 0.00, N/A)	3663.5	N/A	1.0099 [1.0000]	101.0% { 95.3% }			
13C2_PFDa_EIS	(615.0 / 570.0) 319063	(8.58, N/A) (N/A, -0.01, N/A)	2764.7	N/A	1.0946 [1.0000]	109.5% { 111.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 286236	(9.05, N/A) (N/A, 0.00, N/A)	1716.5	N/A	1.0414 [1.0000]	104.1% { 95.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1465385	(5.11, N/A) (N/A, -0.01, N/A)	6409.9	N/A	2.1047 [2.0000]	105.2% { 105.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 854632	(6.48, N/A) (N/A, 0.00, N/A)	1982.4	N/A	2.0907 [2.0000]	104.5% { 106.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1685420	(7.75, N/A) (N/A, 0.00, N/A)	1465.5	N/A	1.9271 [2.0000]	96.4% { 101.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 245429	(4.93, N/A) (N/A, -0.01, N/A)	1112.0	N/A	3.9138 [4.0000]	97.8% { 98.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 304052	(6.17, N/A) (N/A, -0.01, N/A)	2364.4	N/A	4.2482 [4.0000]	106.2% { 103.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 400153	(7.34, N/A) (N/A, 0.01, N/A)	2209.2	N/A	4.2231 [4.0000]	105.6% { 111.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2820892	(9.75, N/A) (N/A, 0.00, N/A)	4514.4	N/A	1.9868 [2.0000]	99.3% { 108.6% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 611915	(10.41, N/A) (N/A, 0.00, N/A)	2137.6	N/A	2.0197 [2.0000]	101.0% { 117.7% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (6)
 Acquired: 2023/04/12 - 11:16

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 487453	(10.59 , N/A) (N/A , 0.00 , N/A)	2630.2	N/A	1.9500 [2.0000]	97.5% { 105.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 775584	(7.71 , N/A) (N/A , 0.00 , N/A)	1762.9	N/A	4.1375 [4.0000]	103.4% { 115.3% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 585646	(7.97 , N/A) (N/A , 0.00 , N/A)	4295.3	N/A	3.8090 [4.0000]	95.2% { 109.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2117188	(10.34 , N/A) (N/A , 0.00 , N/A)	1788.0	N/A	21.0492 [20.0000]	105.2% { 110.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2767175	(10.53 , N/A) (N/A , 0.00 , N/A)	1685.9	N/A	20.8152 [20.0000]	104.1% { 109.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1331354	(5.41 , N/A) (N/A , -0.01 , N/A)	2139.4	N/A	8.3202 [8.0000]	104.0% { 103.2% }			

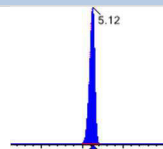
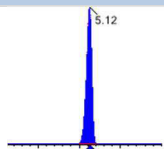
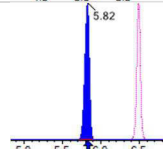
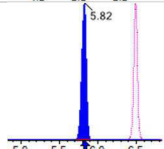
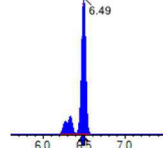
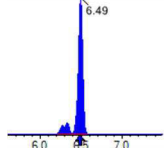
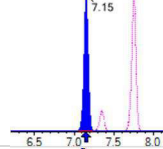
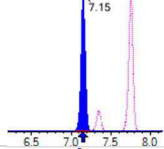
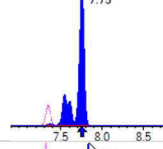
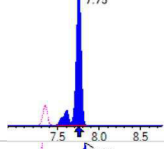
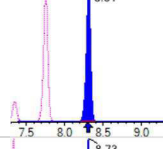
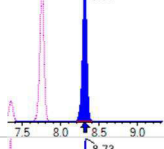
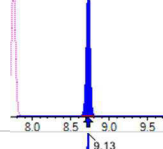
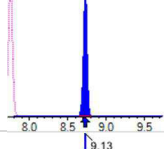
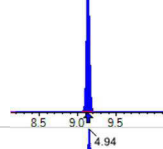
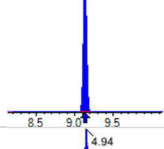
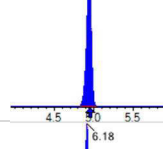
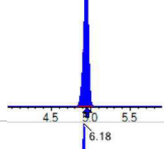
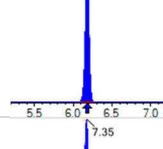
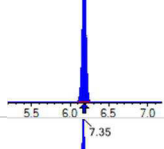
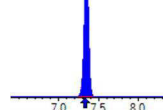
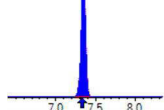


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (7)
 Acquired: 2023/04/12 - 11:29

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	(213.0 / 169.0) 8336477	(3.46, 1.00) (0.00, N/A, 0.0)	185.2	N/A 0.0 0.0	77.5081	N/A			
PFPeA	(263.0 / 219.0) 8260323 (263.0 / 69.0) 94784	(4.32, 1.00) (0.00, N/A, 0.0)	5456.2 1120.3	0.0115 87.4 87.4	36.6681	N/A			
PFHxA	(313.0 / 269.0) 5064878 (313.0 / 119.0) 502226	(5.17, 1.00) (0.00, N/A, -0.2)	3580.5 4900.8	0.0992 90.9 90.9	17.8719	N/A			
PFHpA	(363.0 / 319.0) 4273805 (363.0 / 169.0) 1275791	(5.80, 1.00) (0.00, N/A, 0.0)	13756.7 13930805.7	0.2985 97.8 97.8	19.4796	N/A			
PFOA	(413.0 / 369.0) 5838903 (413.0 / 169.0) 1756290	(6.41, 1.00) (0.00, N/A, 0.0)	3880.2 7917.2	0.3008 96.1 96.1	20.3857	N/A			
PFNA	(463.0 / 419.0) 5161951 (463.0 / 169.0) 1080800	(7.02, 1.00) (0.00, N/A, 0.0)	21109.8 962533.4	0.2094 98.1 98.1	19.3841	N/A			
PFDA	(513.0 / 469.0) 6845341 (513.0 / 169.0) 733876	(7.59, 1.00) (0.00, N/A, 0.0)	3589.3 2024.7	0.1072 93.5 93.5	19.8928	N/A			
PFUnA	(563.0 / 519.0) 5643650 (563.0 / 169.0) 627147	(8.12, 1.00) (0.00, N/A, -0.1)	3997.1 1946.7	0.1111 94.0 94.0	19.5265	N/A			
PFDoA	(613.0 / 569.0) 5198209 (613.0 / 169.0) 775799	(8.59, 1.00) (0.00, N/A, 0.0)	5115.3 4254.9	0.1492 87.1 87.1	19.5027	N/A			
PFTrDA	(663.0 / 619.0) 4238811 (663.0 / 169.0) 1021680	(8.87, 1.03) (N/A, 0.00, 0.0)	4659.7 3295.6	0.2410 97.3 97.3	17.4548	N/A			
PFTeDA	(713.0 / 669.0) 4874708 (713.0 / 169.0) 932034	(9.06, 1.00) (0.00, N/A, 0.0)	3583.2 2098.6	0.1912 94.9 94.9	20.0109	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	(299.0 / 80.0) 8283412 (299.0 / 99.0) 5071726	(5.12, 1.00) (0.00, N/A, 0.0)	9218.1 6552.7	0.6123 95.2 95.2	16.8445	N/A			
PFPeS	(349.0 / 80.0) 13816887 (349.0 / 99.0) 5092743	(5.82, 0.90) (N/A, 0.00, 0.1)	15484.1 48665.6	0.3686 108.7 108.7	16.8822	N/A			
PFHxS	(399.0 / 80.0) 11758110 (399.0 / 99.0) 4009199	(6.49, 1.00) (0.00, N/A, 0.1)	5493.3 43003.0	0.3410 98.5 98.5	16.8602	N/A			
PFHpS	(449.0 / 80.0) 12198707 (449.0 / 99.0) 3387381	(7.15, 0.92) (N/A, 0.01, 0.0)	31409.0 2917268.1	0.2777 100.1 100.1	18.0043	N/A			
PFOS	(499.0 / 80.0) 16844839 (499.0 / 99.0) 3684906	(7.75, 1.00) (0.00, N/A, 0.1)	1632.8 2793.5	0.2188 97.8 97.8	17.7151	N/A			
PFNS	(549.0 / 80.0) 16638860 (549.0 / 99.0) 4066362	(8.31, 1.07) (N/A, 0.01, 0.1)	15910.3 24324.2	0.2444 101.0 101.0	18.7248	N/A			
PFDS	(599.0 / 80.0) 17839167 (599.0 / 99.0) 4184357	(8.73, 1.13) (N/A, 0.01, -0.1)	9920.8 8265.6	0.2346 104.7 104.7	17.7586	N/A			
PFDoS	(699.0 / 80.0) 14294903 (699.0 / 99.0) 3136142	(9.13, 1.18) (N/A, 0.00, 0.0)	5988.7 5189.4	0.2194 91.7 91.7	18.4992	N/A			
4:2FTS	(327.0 / 307.0) 14326445 (327.0 / 81.0) 9176167	(4.94, 1.00) (0.00, N/A, -0.1)	2929.1 2812.5	0.6405 94.2 94.2	74.7736	N/A			
6:2FTS	(427.0 / 407.0) 9247507 (427.0 / 81.0) 6271965	(6.18, 1.00) (0.00, N/A, 0.0)	4369.6 4954.7	0.6782 96.3 96.3	75.6210	N/A			
8:2FTS	(527.0 / 507.0) 9903315 (527.0 / 81.0) 7095052	(7.35, 1.00) (0.00, N/A, 0.0)	4849.8 5230.5	0.7164 106.0 106.0	67.3664	N/A			

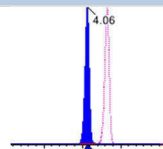
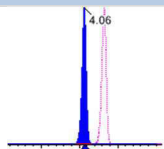
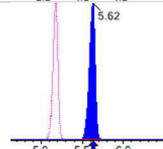
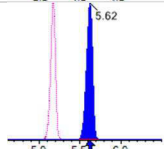
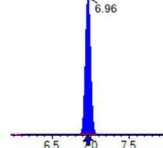
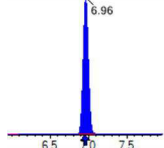
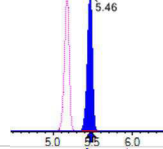
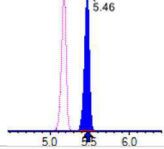
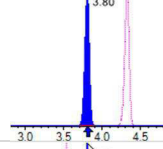
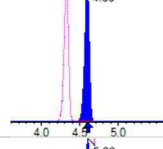
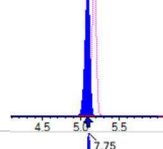
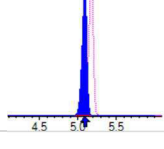
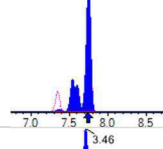
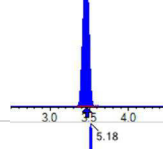
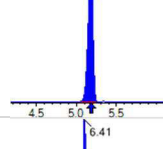
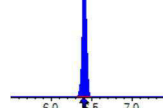


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (7)
 Acquired: 2023/04/12 - 11:29

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
PFOSA	(498.0 / 78.0) 22092534 (498.0 / 478.0) 551602	(9.75, 1.00) (0.00, N/A, 0.0)	5662.6 2649.6	0.0250 100.8 100.8	18.9609	N/A			
NMeFOSA	(512.0 / 219.0) 18248564 (512.0 / 169.0) 15924945	(10.41, 1.00) (0.00, N/A, 1.2)	6349.8 6110.6	0.8727 100.6 100.6	73.3781	N/A			
NEIFOSA	(526.0 / 219.0) 19086443 (526.0 / 169.0) 24056062	(10.58, 1.00) (-0.01, N/A, 0.8)	16689.6 12474.3	1.2604 100.8 100.8	78.0966	N/A			
NMeFOSAA	(570.0 / 419.0) 2841134 (570.0 / 483.0) 1296379	(7.73, 1.00) (0.01, N/A, 0.0)	2989.9 532.9	0.4563 98.5 98.5	19.2477	N/A			
NEIFOSAA	(584.0 / 419.0) 2532777 (584.0 / 526.0) 1488262	(7.98, 1.00) (0.01, N/A, 0.1)	1055542.4 2064.7	0.5876 96.3 96.3	19.6504	N/A			
NMeFOSE	(616.0 / 59.0) 8237073	(10.35, 1.00) (0.01, N/A, 0.0)	4020.5	N/A 0.0 0.0	79.1740	N/A			
NEtFOSE	(630.0 / 59.0) 9822114	(10.54, 1.00) (0.01, N/A, 0.0)	1797.2	N/A 0.0 0.0	77.7479	N/A			
HFPO-DA	(285.0 / 169.0) 5311000 (285.0 / 185.0) 14102856	(5.41, 1.00) (0.00, N/A, 0.1)	2367.6 5852.9	2.6554 102.1 102.1	39.3901	N/A			
ADONA	(377.0 / 85.0) 16923004 (377.0 / 251.0) 1678674	(6.03, 1.11) (N/A, 0.00, 0.0)	4741.7 3339.3	0.0992 99.9 99.9	35.1286	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 46181194 (533.0 / 353.0) 15802731	(8.17, 1.51) (N/A, 0.01, 0.1)	4520.4 4474.6	0.3422 117.8 117.8	31.8403	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 27817968 (633.0 / 453.0) 10177466	(8.92, 1.65) (N/A, 0.01, 0.0)	5331.1 3419.7	0.3659 109.2 109.2	32.4473	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) 649808 (241.0 / 117.0) 1026401	(4.06, 0.94) (N/A, 0.00, 0.0)	71.6 72.5	1.5795 95.7 95.7	78.7203	N/A			
5:3FTCA	(341.0 / 236.7) 3655455 (341.0 / 217.0) 6109198	(5.62, 1.09) (N/A, 0.00, 0.0)	1563.8 2458.7	1.6713 106.5 106.5	82.0668	N/A			
7:3FTCA	(441.0 / 317.0) 6145522 (441.0 / 337.0) 5192551	(6.96, 1.35) (N/A, 0.00, 0.0)	2327.4 2537.3	0.8449 98.1 98.1	78.7873	N/A			
PFEESA	(315.0 / 135.0) 11387603 (315.0 / 83.0) 2784269	(5.46, 1.06) (N/A, 0.00, -0.1)	3682.2 3132.5	0.2445 100.2 100.2	31.9435	N/A			
PFMPA	(229.0 / 85.0) 1799448	(3.80, 0.88) (N/A, 0.00, 0.0)	4811.3	N/A 0.0 0.0	37.5100	N/A			
PFMBA	(279.0 / 85.0) 6639306	(4.59, 1.06) (N/A, -0.01, 0.0)	4214.6	N/A 0.0 0.0	37.7981	N/A			
NFDHA	(295.0 / 201.0) 5446018 (295.0 / 85.0) 5515819	(5.09, 0.98) (N/A, 0.00, -0.1)	3780.8 3759.8	1.0128 103.4 103.4	37.5958	N/A			
TDCA	(499.0 / 80.0) 14309027	(7.75, 1.00) (N/A, 0.01, 0.0)	43131.7	N/A 0.0 0.0	17.4838	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 120305	(3.46, N/A) (N/A, 0.00, N/A)	1389.9	N/A	0.9868 [1.0000]	98.7% { 100.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 230376	(5.18, N/A) (N/A, 0.00, N/A)	1030.0	N/A	1.1358 [1.0000]	113.6% { 117.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 331042	(6.41, N/A) (N/A, 0.01, N/A)	2168.6	N/A	1.0417 [1.0000]	104.2% { 102.7% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (7)
 Acquired: 2023/04/12 - 11:29

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
13C5_PFNA_IIS	(468.0 / 423.0) 325196	(7.02, N/A) (N/A, 0.01, N/A)	1975.4	N/A	1.0715 [1.0000]	107.1% { 105.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 380308	(7.59, N/A) (N/A, 0.01, N/A)	6855.5	N/A	1.1721 [1.0000]	117.2% { 124.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 479774	(6.49, N/A) (N/A, 0.01, N/A)	4038.7	N/A	1.0713 [1.0000]	107.1% { 116.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 684640	(7.76, N/A) (N/A, 0.01, N/A)	1924.4	N/A	1.0067 [1.0000]	100.7% { 105.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 984695	(3.45, N/A) (N/A, 0.00, N/A)	4342.9	N/A	7.7198 [8.0000]	96.5% { 94.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 937654	(4.32, N/A) (N/A, -0.01, N/A)	2893.3	N/A	3.6336 [4.0000]	90.8% { 104.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 587565	(5.17, N/A) (N/A, 0.00, N/A)	2579.2	N/A	1.7994 [2.0000]	90.0% { 100.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 509049	(5.80, N/A) (N/A, 0.00, N/A)	1974.5	N/A	1.7848 [2.0000]	89.2% { 103.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 607547	(6.41, N/A) (N/A, 0.01, N/A)	2511.5	N/A	1.8594 [2.0000]	93.0% { 98.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 288707	(7.02, N/A) (N/A, 0.01, N/A)	6859.1	N/A	0.9449 [1.0000]	94.5% { 96.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 366102	(7.59, N/A) (N/A, 0.01, N/A)	5013.4	N/A	0.8581 [1.0000]	85.8% { 101.8% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (7)
 Acquired: 2023/04/12 - 11:29

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
13C7_PFUa_EIS	(570.0 / 525.0) 328492	(8.12, N/A) (N/A, 0.01, N/A)	3350.4	N/A	0.8294 [1.0000]	82.9% { 91.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 293877	(8.59, N/A) (N/A, 0.00, N/A)	1371.9	N/A	0.8666 [1.0000]	86.7% { 102.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 265800	(9.06, N/A) (N/A, 0.00, N/A)	1468.3	N/A	0.8312 [1.0000]	83.1% { 88.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1378865	(5.12, N/A) (N/A, 0.00, N/A)	2284.4	N/A	1.8306 [2.0000]	91.5% { 98.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 887134	(6.49, N/A) (N/A, 0.01, N/A)	2664.4	N/A	2.0060 [2.0000]	100.3% { 110.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1680510	(7.75, N/A) (N/A, 0.01, N/A)	1000.0	N/A	2.0261 [2.0000]	101.3% { 100.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 258089	(4.94, N/A) (N/A, 0.00, N/A)	1329.6	N/A	3.8043 [4.0000]	95.1% { 103.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 285835	(6.18, N/A) (N/A, 0.00, N/A)	2171.4	N/A	3.6915 [4.0000]	92.3% { 97.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 416777	(7.35, N/A) (N/A, 0.02, N/A)	1617.3	N/A	4.0658 [4.0000]	101.6% { 116.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2659657	(9.75, N/A) (N/A, 0.00, N/A)	3807.8	N/A	1.9752 [2.0000]	98.8% { 102.4% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 599448	(10.41, N/A) (N/A, 0.00, N/A)	2321.2	N/A	2.0863 [2.0000]	104.3% { 115.3% }			

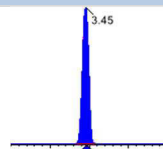
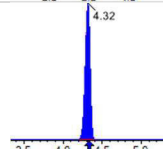
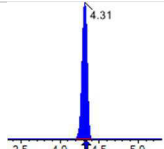
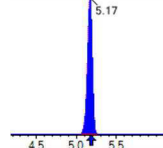
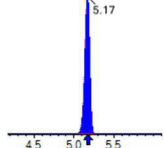
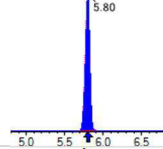
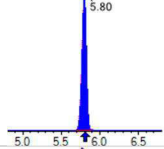
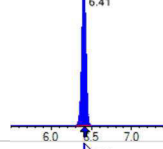
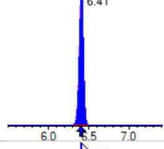
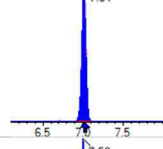
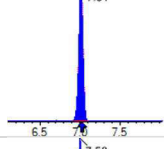
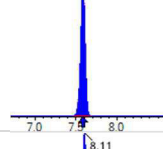
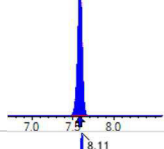
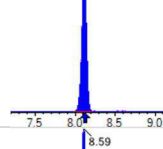
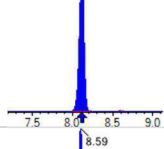
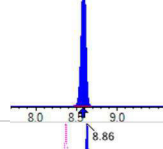
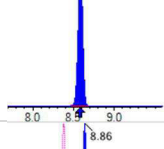
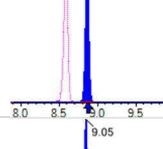
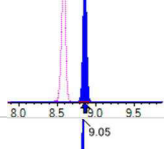
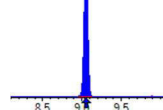
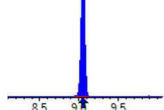


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (7)
 Acquired: 2023/04/12 - 11:29

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 465273	(10.59 , N/A) (N/A , 0.00 , N/A)	2873.0	N/A	1.9626 [2.0000]	98.1% { 101.1% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 694633	(7.72 , N/A) (N/A , 0.01 , N/A)	1651.1	N/A	3.9074 [4.0000]	97.7% { 103.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 582831	(7.97 , N/A) (N/A , 0.01 , N/A)	11176.0	N/A	3.9970 [4.0000]	99.9% { 108.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1905861	(10.34 , N/A) (N/A , 0.00 , N/A)	1562.5	N/A	19.9795 [20.0000]	99.9% { 99.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2565618	(10.53 , N/A) (N/A , 0.00 , N/A)	1500.6	N/A	20.3495 [20.0000]	101.7% { 101.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1277261	(5.41 , N/A) (N/A , 0.00 , N/A)	2463.5	N/A	6.9336 [8.0000]	86.7% { 99.0% }			

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	(213.0 / 169.0) 16321173	(3.45, 1.00) (0.00, N/A, 0.0)	191.6	N/A 0.0 0.0	203.9263	N/A			
PFPeA	(263.0 / 219.0) 18226887 (263.0 / 69.0) 197084	(4.32, 1.00) (0.00, N/A, 0.0)	7548.9 1435.2	0.0108 82.4 82.4	98.5734	N/A			
PFHxA	(313.0 / 269.0) 11515186 (313.0 / 119.0) 1190537	(5.17, 1.00) (0.00, N/A, 0.0)	4155.4 6168.8	0.1034 94.7 94.7	47.5796	N/A			
PFHpA	(363.0 / 319.0) 9136652 (363.0 / 169.0) 2962501	(5.80, 1.00) (0.00, N/A, 0.0)	9015.7 36945.3	0.3242 106.2 106.2	49.7999	N/A			
PFOA	(413.0 / 369.0) 13317452 (413.0 / 169.0) 4336194	(6.41, 1.00) (0.00, N/A, -0.1)	6275.8 14471.8	0.3256 104.0 104.0	47.4783	N/A			
PFNA	(463.0 / 419.0) 11914344 (463.0 / 169.0) 2665706	(7.01, 1.00) (0.00, N/A, 0.0)	14124.1 300150.1	0.2237 104.8 104.8	52.6607	N/A			
PFDA	(513.0 / 469.0) 15891316 (513.0 / 169.0) 1735783	(7.58, 1.00) (0.00, N/A, 0.0)	4064.0 4229.6	0.1092 95.3 95.3	50.2531	N/A			
PFUnA	(563.0 / 519.0) 12418738 (563.0 / 169.0) 1510010	(8.11, 1.00) (0.00, N/A, 0.0)	4990.8 3197.0	0.1216 102.9 102.9	48.9769	N/A			
PFDoA	(613.0 / 569.0) 11309048 (613.0 / 169.0) 1800808	(8.59, 1.00) (0.00, N/A, 0.1)	4094.1 2977.5	0.1592 92.9 92.9	44.9087	N/A			
PFTrDA	(663.0 / 619.0) 9728934 (663.0 / 169.0) 2364044	(8.86, 1.03) (N/A, 0.00, 0.1)	5136.0 3419.5	0.2430 98.1 98.1	42.4032	N/A			
PFTeDA	(713.0 / 669.0) 10296548 (713.0 / 169.0) 2084991	(9.05, 1.00) (0.00, N/A, 0.0)	3951.8 2641.5	0.2025 100.5 100.5	47.5509	N/A			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (8)
 Acquired: 2023/04/12 - 11:42

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	(299.0 / 80.0) 18239399 (299.0 / 99.0) 11465337	(5.12, 1.00) (0.00, N/A, 0.0)	5763.2 6628.5	0.6286 97.8 97.8	42.5124	N/A			
PFPeS	(349.0 / 80.0) 29745667 (349.0 / 99.0) 10956005	(5.82, 0.90) (N/A, -0.01, -0.1)	16147.3 359335.2	0.3683 108.6 108.6	43.3808	N/A			
PFHxS	(399.0 / 80.0) 27539282 (399.0 / 99.0) 9799521	(6.49, 1.00) (0.00, N/A, 0.1)	6881.9 20069.1	0.3558 102.7 102.7	47.1340	N/A			
PFHpS	(449.0 / 80.0) 26711444 (449.0 / 99.0) 8223764	(7.14, 0.92) (N/A, 0.00, 0.1)	19905.0 491917.4	0.3079 111.0 111.0	45.6020	N/A			
PFOS	(499.0 / 80.0) 37859811 (499.0 / 99.0) 8657663	(7.75, 1.00) (0.00, N/A, 0.0)	2124.4 3666.0	0.2287 102.2 102.2	46.0554	N/A			
PFNS	(549.0 / 80.0) 35795495 (549.0 / 99.0) 9560953	(8.30, 1.07) (N/A, 0.00, 0.0)	15663.1 49923.1	0.2671 110.4 110.4	46.5957	N/A			
PFDS	(599.0 / 80.0) 38204070 (599.0 / 99.0) 9447079	(8.72, 1.13) (N/A, 0.00, 0.0)	9927.8 12158.0	0.2473 110.4 110.4	43.9915	N/A			
PFDoS	(699.0 / 80.0) 29891551 (699.0 / 99.0) 7401855	(9.12, 1.18) (N/A, 0.00, 0.0)	5015.0 5112.7	0.2476 103.5 103.5	44.7450	N/A			
4:2FTS	(327.0 / 307.0) 31263132 (327.0 / 81.0) 20030483	(4.94, 1.00) (0.00, N/A, 0.0)	4338.1 4256.3	0.6407 94.2 94.2	160.7142	N/A			
6:2FTS	(427.0 / 407.0) 21293366 (427.0 / 81.0) 14924778	(6.17, 1.00) (0.00, N/A, 0.1)	4611.8 5756.9	0.7009 99.5 99.5	162.2370	N/A			
8:2FTS	(527.0 / 507.0) 25257031 (527.0 / 81.0) 17293685	(7.34, 1.00) (0.00, N/A, 0.1)	4058.1 5579.9	0.6847 101.3 101.3	157.7088	N/A			

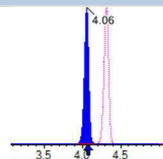
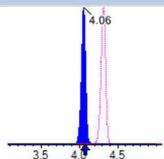
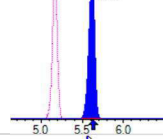
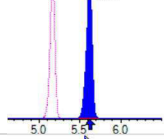
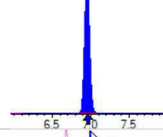
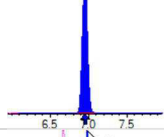
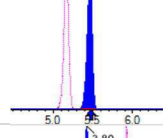
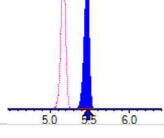
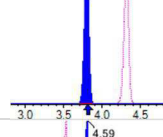
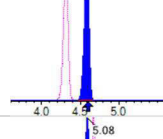
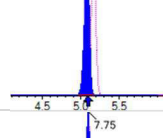
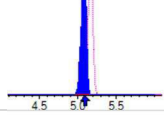
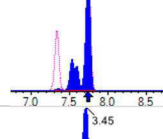
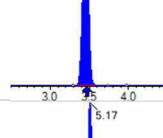
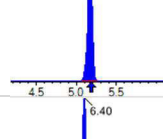
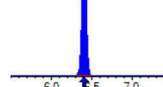


Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL8
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
Path: S2023-04-12A (8)
Acquired: 2023/04/12 - 11:42

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
PFOSA	(498.0 / 78.0) 43243955 (498.0 / 478.0) 1221795	(9.74, 1.00) (0.00, N/A, 0.0)	8017.8 4022.6	0.0283 114.1 114.1	43.3981	N/A			
NMeFOSA	(512.0 / 219.0) 40951608 (512.0 / 169.0) 35450093	(10.40, 1.00) (0.00, N/A, 1.1)	5047.6 4261.8	0.8657 99.8 99.8	154.7837	N/A			
NEIFOSA	(526.0 / 219.0) 44714517 (526.0 / 169.0) 53189920	(10.57, 1.00) (-0.01, N/A, 0.5)	13606.5 15635.1	1.1895 95.1 95.1	184.6525	N/A			
NMeFOSAA	(570.0 / 419.0) 6779930 (570.0 / 483.0) 3161782	(7.72, 1.00) (0.00, N/A, 0.1)	3644.8 716.1	0.4663 100.7 100.7	48.1148	N/A			
NEIFOSAA	(584.0 / 419.0) 6528275 (584.0 / 526.0) 3831329	(7.98, 1.00) (0.01, N/A, 0.1)	311331.5 11072.7	0.5869 96.1 96.1	48.1177	N/A			
NMeFOSE	(616.0 / 59.0) 18243246	(10.34, 1.00) (0.01, N/A, 0.0)	4114.9	N/A 0.0 0.0	206.7715	N/A			
NEtFOSE	(630.0 / 59.0) 21941729	(10.54, 1.00) (0.01, N/A, 0.0)	1658.6	N/A 0.0 0.0	206.7886	N/A			
HFPO-DA	(285.0 / 169.0) 11416105 (285.0 / 185.0) 29884988	(5.41, 1.00) (0.00, N/A, 0.0)	3084.4 4366.0	2.6178 100.6 100.6	93.3000	N/A			
ADONA	(377.0 / 85.0) 35388242 (377.0 / 251.0) 3935726	(6.02, 1.11) (N/A, 0.00, 0.1)	4655.9 4958.3	0.1112 112.0 112.0	80.9461	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) 1562319 (241.0 / 117.0) 2743207	(4.06, 0.94) (N/A, -0.01, 0.0)	80.3 72.9	1.7559 106.3 106.3	230.5826	N/A			
5:3FTCA	(341.0 / 236.7) 9396313 (341.0 / 217.0) 15783180	(5.62, 1.09) (N/A, -0.01, -0.2)	2295.2 2368.7	1.6797 107.1 107.1	247.0201	N/A			
7:3FTCA	(441.0 / 317.0) 15787387 (441.0 / 337.0) 12934620	(6.95, 1.35) (N/A, -0.01, 0.0)	2636.8 3094.1	0.8193 95.1 95.1	237.0046	N/A			
PFEESA	(315.0 / 135.0) 24484793 (315.0 / 83.0) 6363930	(5.46, 1.06) (N/A, 0.00, 0.0)	2433.8 3522.2	0.2599 106.5 106.5	80.4258	N/A			
PFMPA	(229.0 / 85.0) 3770161	(3.80, 0.88) (N/A, -0.01, 0.0)	6262.1	N/A 0.0 0.0	95.7464	N/A			
PFMBA	(279.0 / 85.0) 14289945	(4.59, 1.06) (N/A, -0.02, 0.0)	5400.3	N/A 0.0 0.0	99.1137	N/A			
NFDHA	(295.0 / 201.0) 11252031 (295.0 / 85.0) 11921655	(5.08, 0.98) (N/A, -0.01, 0.0)	3556.5 4719.0	1.0595 108.2 108.2	90.9577	N/A			
TDCA	(499.0 / 80.0) 34657578	(7.75, 1.00) (N/A, 0.00, 0.0)	63027.6	N/A 0.0 0.0	48.9834	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 89991	(3.45, N/A) (N/A, -0.01, N/A)	1043.6	N/A	0.7382 [1.0000]	73.8% { 75.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 187502	(5.17, N/A) (N/A, 0.00, N/A)	7610.8	N/A	0.9245 [1.0000]	92.4% { 95.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 284262	(6.40, N/A) (N/A, 0.00, N/A)	3062.5	N/A	0.8945 [1.0000]	89.4% { 88.2% }			

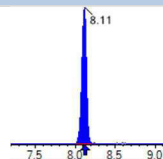
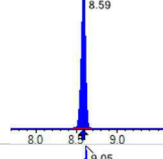
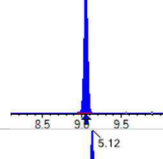
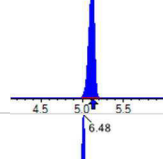
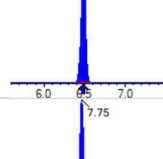
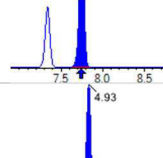
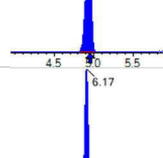
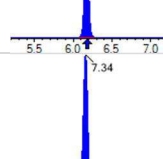
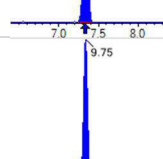
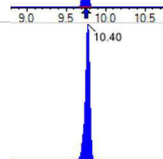
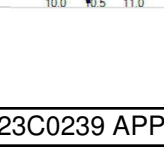


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (8)
 Acquired: 2023/04/12 - 11:42

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
13C5_PFNA_IIS	(468.0 / 423.0) 298152	(7.01, N/A) (N/A, 0.00, N/A)	5700.3	N/A	0.9824 [1.0000]	98.2% { 97.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 303266	(7.58, N/A) (N/A, 0.00, N/A)	1727.4	N/A	0.9347 [1.0000]	93.5% { 99.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 440633	(6.49, N/A) (N/A, 0.00, N/A)	1828.6	N/A	0.9839 [1.0000]	98.4% { 106.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 611168	(7.75, N/A) (N/A, 0.01, N/A)	1457.8	N/A	0.8987 [1.0000]	89.9% { 94.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 732731	(3.45, N/A) (N/A, -0.01, N/A)	3635.0	N/A	7.6796 [8.0000]	96.0% { 70.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 769639	(4.31, N/A) (N/A, -0.02, N/A)	3990.1	N/A	3.6645 [4.0000]	91.6% { 85.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 501773	(5.17, N/A) (N/A, -0.01, N/A)	1752.1	N/A	1.8880 [2.0000]	94.4% { 85.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 425681	(5.80, N/A) (N/A, -0.01, N/A)	2541.8	N/A	1.8337 [2.0000]	91.7% { 86.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 594978	(6.41, N/A) (N/A, 0.00, N/A)	3583.0	N/A	2.1206 [2.0000]	106.0% { 96.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 245286	(7.01, N/A) (N/A, 0.00, N/A)	5690.2	N/A	0.8757 [1.0000]	87.6% { 81.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 336433	(7.58, N/A) (N/A, 0.00, N/A)	9233.6	N/A	0.9889 [1.0000]	98.9% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 288187	(8.11, N/A) (N/A, 0.00, N/A)	1054.5	N/A	0.9125 [1.0000]	91.3% { 79.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 277653	(8.59, N/A) (N/A, 0.00, N/A)	2426.3	N/A	1.0268 [1.0000]	102.7% { 96.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 236268	(9.05, N/A) (N/A, 0.00, N/A)	1369.7	N/A	0.9266 [1.0000]	92.7% { 78.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1202997	(5.12, N/A) (N/A, -0.01, N/A)	2531.8	N/A	1.7390 [2.0000]	86.9% { 86.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 743248	(6.48, N/A) (N/A, 0.00, N/A)	2303.6	N/A	1.8300 [2.0000]	91.5% { 92.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1452835	(7.75, N/A) (N/A, 0.00, N/A)	721.5	N/A	1.9621 [2.0000]	98.1% { 87.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 262034	(4.93, N/A) (N/A, -0.01, N/A)	1063.2	N/A	4.2055 [4.0000]	105.1% { 105.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 306781	(6.17, N/A) (N/A, -0.01, N/A)	1739.2	N/A	4.3140 [4.0000]	107.8% { 104.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 454039	(7.34, N/A) (N/A, 0.00, N/A)	1520.3	N/A	4.8227 [4.0000]	120.6% { 126.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2274543	(9.75, N/A) (N/A, -0.01, N/A)	3450.8	N/A	1.8923 [2.0000]	94.6% { 87.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 637727	(10.40, N/A) (N/A, 0.00, N/A)	2157.5	N/A	2.4863 [2.0000]	124.3% { 122.7% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (8)
 Acquired: 2023/04/12 - 11:42

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 461008	(10.59 , N/A) (N/A , 0.00 , N/A)	2337.9	N/A	2.1784 [2.0000]	108.9% { 100.2% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 663116	(7.72 , N/A) (N/A , 0.00 , N/A)	1135.0	N/A	4.1785 [4.0000]	104.5% { 98.6% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 613495	(7.97 , N/A) (N/A , 0.00 , N/A)	15031.5	N/A	4.7131 [4.0000]	117.8% { 114.3% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1616264	(10.33 , N/A) (N/A , -0.01 , N/A)	1147.0	N/A	18.9805 [20.0000]	94.9% { 84.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2154865	(10.52 , N/A) (N/A , 0.00 , N/A)	1496.1	N/A	19.1462 [20.0000]	95.7% { 85.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1159115	(5.41 , N/A) (N/A , -0.01 , N/A)	1895.6	N/A	7.7310 [8.0000]	96.6% { 89.8% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2313008**Laboratory ID:** SC01216-SCV1**Sequence:** SC01216**Standard ID:** 23C0366

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	8.48	5.9	30.00
PFPEA	4.00	4.22	5.5	30.00
PFHXA	2.00	2.08	4.2	30.00
PFHPA	2.00	2.04	1.8	30.00
PFOA	2.00	2.14	6.9	30.00
PFNA	2.00	2.32	15.9	30.00
PFDA	2.00	2.17	8.5	30.00
PFUnA	2.00	2.14	6.9	30.00
PFDOA	2.00	2.17	8.7	30.00
PFTRDA	2.00	2.34	16.8	30.00
PFTEDA	2.00	2.25	12.6	30.00
PFBS	1.77	1.97	11.4	30.00
PFPEs	1.88	2.04	8.5	30.00
PFHXS	1.83	1.93	5.7	30.00
PFHPS	1.91	1.93	1.0	30.00
PFOS	1.86	1.81	-2.6	30.00
PFNS	1.92	1.98	3.0	30.00
PFDS	1.93	2.04	5.8	30.00
PFDOS	1.94	2.05	5.8	30.00
4:2FTS	7.50	7.80	4.0	30.00
6:2FTS	7.60	9.19	20.9	30.00
8:2FTS	7.68	8.30	8.1	30.00
PFOSA	2.00	2.26	12.8	30.00
NMeFOSA	8.00	8.76	9.6	30.00
NEtFOSA	8.00	7.21	-9.9	30.00
NMeFOSAA	2.00	2.00	-0.03	30.00
NEtFOSAA	2.00	1.97	-1.4	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2313008**Laboratory ID:** SC01216-SCV1**Sequence:** SC01216**Standard ID:** 23C0366

NMeFOSE	8.00	8.73	9.1	30.00
NEtFOSE	8.00	9.19	14.9	30.00
HFPO-DA	4.00	4.28	7.0	30.00
ADONA	3.78	3.99	5.7	30.00
PFEESA	3.56	4.03	13.3	30.00
PFMPA	4.00	4.32	8.1	30.00
PFMBA	4.00	4.28	7.1	30.00
NFDHA	4.00	4.65	16.2	30.00
9CL-PF3ONS	3.74	4.19	12.1	30.00
11CL-PF3OUDS	3.78	4.17	10.2	30.00
3:3FTCA	8.00	8.98	12.3	30.00
5:3FTCA	8.00	8.00	0.05	30.00
7:3FTCA	8.00	8.06	0.8	30.00
13C4-PFBA	8.00	7.53	-5.9	30.00
13C5-PFPEA	4.00	3.67	-8.3	30.00
13C5-PFHXA	2.00	1.79	-10.6	30.00
13C4-PFHPA	2.00	1.89	-5.3	30.00
13C8-PFOA	2.00	1.83	-8.3	30.00
13C9-PFNA	1.00	0.905	-9.5	30.00
13C6-PFDA	1.00	0.952	-4.8	30.00
13C7-PFUnA	1.00	0.919	-8.1	30.00
13C2-PFDOA	1.00	0.900	-10.0	30.00
13C2-PFTEDA	1.00	0.905	-9.5	30.00
13C3-PFBS	2.00	1.95	-2.7	30.00
13C3-PFHXS	2.00	2.00	-0.1	30.00
13C8-PFOS	2.00	1.90	-5.2	30.00
13C2-4:2FTS	4.00	3.91	-2.2	30.00
13C2-6:2FTS	4.00	3.56	-11.0	30.00
13C2-8:2FTS	4.00	3.65	-8.9	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2313008**Laboratory ID:** SC01216-SCV1**Sequence:** SC01216**Standard ID:** 23C0366

13C8-PFOSA	2.00	1.84	-7.9	30.00
D3-NMEFOSA	2.00	1.85	-7.4	30.00
D5-NETFOSA	2.00	1.98	-1.1	30.00
D3-NMEFOSAA	4.00	3.93	-1.7	30.00
D5-NETFOSAA	4.00	3.56	-11.0	30.00
D7-NMEFOSE	20.0	20.2	1.1	30.00
D9-NETFOSAE	20.0	18.1	-9.3	30.00
13C3-HFPO-DA	8.00	7.84	-2.0	30.00

* Values outside of QC limits

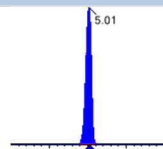
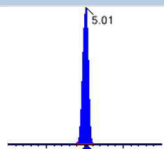
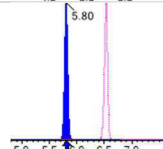
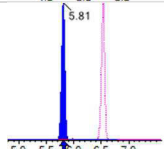
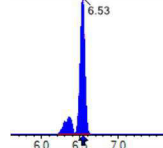
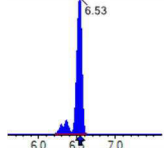
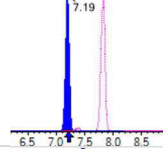
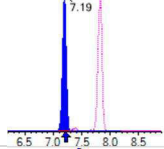
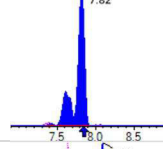
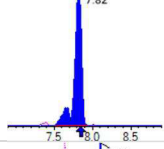
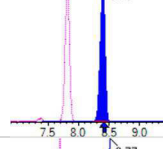
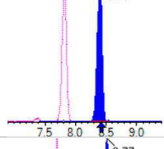
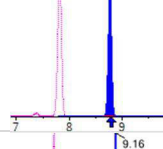
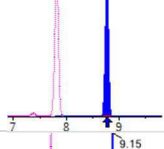
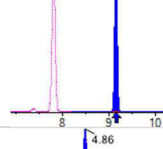
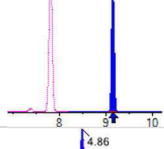
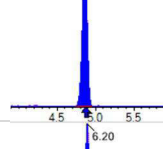
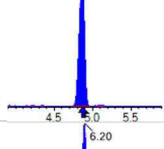
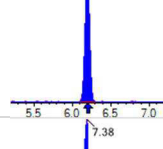
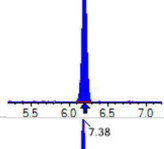
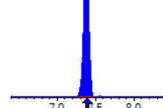
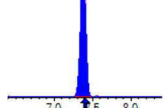


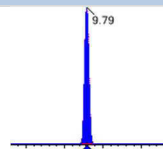
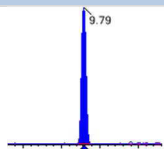
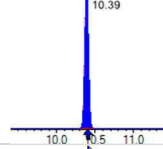
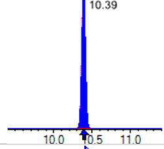
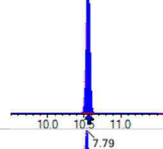
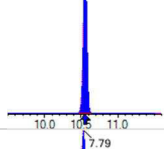
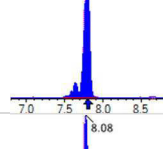
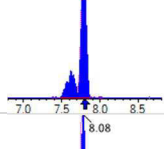
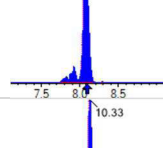
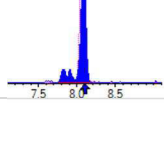
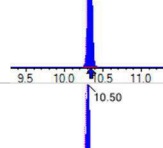
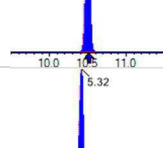
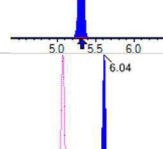
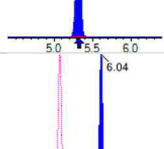
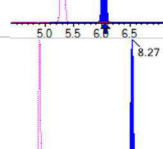
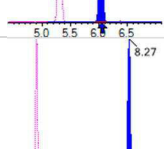
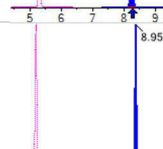
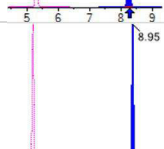
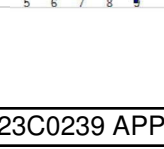
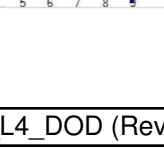
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01216-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-28B (10)
 Acquired: 2023/03/28 - 21:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1430781	(3.44, 1.00) (0.00, N/A, 0.0)	174.6	N/A 0.0 0.0	8.4753	N/A			
PFPeA	(263.0 / 219.0) 1218034 (263.0 / 69.0) 14001	(4.30, 1.00) (0.00, N/A, -0.1)	2647.9 314.8	0.0115 108.6 108.6	4.2182	N/A			
PFHxA	(313.0 / 269.0) 667815 (313.0 / 119.0) 69359	(5.07, 1.00) (0.00, N/A, 0.3)	1448.5 539.0	0.1039 100.8 100.8	2.0838	N/A			
PFHpA	(363.0 / 319.0) 579951 (363.0 / 169.0) 163907	(5.78, 1.00) (0.00, N/A, 0.1)	4765.0 37117.9	0.2826 89.1 89.1	2.0359	N/A			
PFOA	(413.0 / 369.0) 779078 (413.0 / 169.0) 266353	(6.44, 1.00) (0.00, N/A, 0.1)	1308.4 9637.8	0.3419 99.8 99.8	2.1386	N/A			
PFNA	(463.0 / 419.0) 672361 (463.0 / 169.0) 141579	(7.05, 1.00) (0.00, N/A, -0.2)	5046.0 4414691.9	0.2106 96.4 96.4	2.3175	N/A			
PFDA	(513.0 / 469.0) 853235 (513.0 / 169.0) 82113	(7.63, 1.00) (0.00, N/A, 0.2)	1147.1 1100.9	0.0962 87.8 87.8	2.1698	N/A			
PFUnA	(563.0 / 519.0) 715397 (563.0 / 169.0) 85647	(8.20, 1.00) (0.00, N/A, 0.1)	1239.1 1213.1	0.1197 95.7 95.7	2.1381	N/A			
PFDoA	(613.0 / 569.0) 702548 (613.0 / 169.0) 105523	(8.64, 1.00) (0.00, N/A, 0.0)	1369.6 3187.7	0.1502 96.0 96.0	2.1748	N/A			
PFTrDA	(663.0 / 619.0) 672397 (663.0 / 169.0) 153517	(8.90, 1.03) (N/A, -0.01, 0.0)	2118.7 1369.4	0.2283 96.9 96.9	2.3362	N/A			
PFTeDA	(713.0 / 669.0) 737913 (713.0 / 169.0) 136038	(9.08, 1.00) (0.00, N/A, -0.1)	1551.7 670.5	0.1844 95.0 95.0	2.2517	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	(299.0 / 80.0) 1145961 (299.0 / 99.0) 725270	(5.01, 1.00) (0.00, N/A, 0.1)	18080204.0 4496.4	0.6329 94.5 94.5	1.9720	N/A			
PFPeS	(349.0 / 80.0) 1806648 (349.0 / 99.0) 650901	(5.80, 0.89) (N/A, -0.01, -0.2)	241401.7 3823.9	0.3603 101.9 101.9	2.0395	N/A			
PFHxS	(399.0 / 80.0) 1587534 (399.0 / 99.0) 529483	(6.53, 1.00) (0.00, N/A, 0.1)	107729.8 11345019.3	0.3335 98.8 98.8	1.9342	N/A			
PFHpS	(449.0 / 80.0) 1637445 (449.0 / 99.0) 425976	(7.19, 0.92) (N/A, -0.01, 0.0)	6748.1 6829.5	0.2601 90.4 90.4	1.9284	N/A			
PFOS	(499.0 / 80.0) 1920132 (499.0 / 99.0) 426393	(7.82, 1.00) (0.00, N/A, 0.0)	1120.1 508.7	0.2221 97.4 97.4	1.8114	N/A			
PFNS	(549.0 / 80.0) 2112898 (549.0 / 99.0) 506479	(8.40, 1.07) (N/A, -0.01, 0.0)	145068.7 3827.5	0.2397 103.2 103.2	1.9784	N/A			
PFDS	(599.0 / 80.0) 2444966 (599.0 / 99.0) 546114	(8.77, 1.12) (N/A, -0.01, 0.0)	9311.3 4408.7	0.2234 102.3 102.3	2.0425	N/A			
PFDoS	(699.0 / 80.0) 2029826 (699.0 / 99.0) 476684	(9.16, 1.17) (N/A, -0.01, 0.1)	3438.7 1522.6	0.2348 104.6 104.6	2.0526	N/A			
4:2FTS	(327.0 / 307.0) 2117893 (327.0 / 81.0) 1295948	(4.86, 1.00) (0.00, N/A, -0.1)	2665.4 948.1	0.6119 98.7 98.7	7.7993	N/A			
6:2FTS	(427.0 / 407.0) 1280628 (427.0 / 81.0) 960772	(6.20, 1.00) (0.00, N/A, 0.0)	2089.3 1360.6	0.7502 104.8 104.8	9.1903	N/A			
8:2FTS	(527.0 / 507.0) 1304178 (527.0 / 81.0) 951340	(7.38, 1.00) (0.00, N/A, 0.1)	1915.6 2028.6	0.7295 102.6 102.6	8.3022	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) 3181655 (498.0 / 478.0) 70071	(9.79, 1.00) (0.00, N/A, 0.0)	3346.3 533.1	0.0220 96.5 96.5	2.2561	N/A			
NMeFOSA	(512.0 / 219.0) 2816692 (512.0 / 169.0) 2055639	(10.39, 1.00) (0.00, N/A, 0.0)	7467.6 6604.6	0.7298 84.8 84.8	8.7650	N/A			
NEIFOSA	(526.0 / 219.0) 2645265 (526.0 / 169.0) 2873206	(10.56, 1.00) (0.01, N/A, 0.0)	7897.4 5093.1	1.0862 86.0 86.0	7.2060	N/A			
NMeFOSAA	(570.0 / 419.0) 389447 (570.0 / 483.0) 169589	(7.79, 1.00) (0.01, N/A, 0.3)	1236.8 356.0	0.4355 89.1 89.1	1.9995	N/A			
NEIFOSAA	(584.0 / 419.0) 297067 (584.0 / 526.0) 190296	(8.08, 1.00) (0.01, N/A, -0.4)	38945.5 1467.3	0.6406 109.2 109.2	1.9724	N/A			
NMeFOSE	(616.0 / 59.0) 1210353	(10.33, 1.00) (0.01, N/A, 0.0)	2096.1	N/A 0.0 0.0	8.7303	N/A			
NEtFOSE	(630.0 / 59.0) 1393452	(10.50, 1.00) (0.01, N/A, 0.0)	2343.4	N/A 0.0 0.0	9.1941	N/A			
HFPO-DA	(285.0 / 169.0) 679008 (285.0 / 185.0) 1755993	(5.32, 1.00) (0.00, N/A, 0.1)	1475.8 2125.6	2.5861 91.6 91.6	4.2796	N/A			
ADONA	(377.0 / 85.0) 2449198 (377.0 / 251.0) 252638	(6.04, 1.14) (N/A, -0.01, 0.0)	3129.5 2858.1	0.1032 99.0 99.0	3.9942	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 7000121 (533.0 / 353.0) 1988939	(8.27, 1.56) (N/A, -0.01, 0.0)	4364.1 3145.3	0.2841 93.4 93.4	4.1908	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 4470712 (633.0 / 453.0) 1493317	(8.95, 1.68) (N/A, -0.01, 0.1)	5056.6 3611.8	0.3340 98.4 98.4	4.1668	N/A			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01216-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-28B (10)
 Acquired: 2023/03/28 - 21:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 70758 (241.0 / 117.0) 150713	(4.01, 0.93) (N/A, 0.00, 0.0)	592.4 642.0	2.1300 94.1 94.1	8.9817	N/A			
5:3FTCA	(341.0 / 236.7) 450352 (341.0 / 217.0) 784387	(5.45, 1.08) (N/A, -0.01, -0.1)	937.9 1022.1	1.7417 104.5 104.5	8.0041	N/A			
7:3FTCA	(441.0 / 317.0) 723636 (441.0 / 337.0) 671928	(7.01, 1.38) (N/A, -0.01, -0.2)	997.1 1122.9	0.9285 111.8 111.8	8.0631	N/A			
PFEESA	(315.0 / 135.0) 1563461 (315.0 / 83.0) 419137	(5.36, 1.06) (N/A, -0.01, -0.1)	4111.1 1108.9	0.2681 106.0 106.0	4.0319	N/A			
PFMPA	(229.0 / 85.0) 290010	(3.79, 0.88) (N/A, 0.00, 0.0)	2257.5	N/A 0.0 0.0	4.3229	N/A			
PFMBA	(279.0 / 85.0) 965415	(4.55, 1.06) (N/A, 0.00, 0.0)	2508.7	N/A 0.0 0.0	4.2828	N/A			
NFDHA	(295.0 / 201.0) 887141 (295.0 / 85.0) 896714	(4.99, 0.99) (N/A, 0.00, 0.1)	2141.5 1923.8	1.0108 101.4 101.4	4.6480	N/A			
TDCA	(499.0 / 80.0) 1909971	(7.82, 1.00) (N/A, -0.01, 0.0)	80313.7	N/A 0.0 0.0	1.9324	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 196552	(3.44, N/A) (N/A, -0.01, N/A)	1529.5	N/A	1.0115 [1.0000]	101.2% { 99.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 280978	(5.07, N/A) (N/A, 0.00, N/A)	1373.1	N/A	1.0460 [1.0000]	104.6% { 107.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 455621	(6.44, N/A) (N/A, -0.01, N/A)	5995.0	N/A	1.0131 [1.0000]	101.3% { 98.0% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01216-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-28B (10)
 Acquired: 2023/03/28 - 21:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 397328	(7.05, N/A) (N/A, -0.01, N/A)	1463.4	N/A	0.9878 [1.0000]	98.8% { 99.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 404906	(7.64, N/A) (N/A, -0.01, N/A)	3804.5	N/A	1.0000 [1.0000]	100.0% { 91.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 613028	(6.53, N/A) (N/A, -0.01, N/A)	2486.1	N/A	0.9540 [1.0000]	95.4% { 96.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 846371	(7.82, N/A) (N/A, -0.01, N/A)	1954.6	N/A	1.0716 [1.0000]	107.2% { 103.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1545721	(3.44, N/A) (N/A, -0.01, N/A)	5925.1	N/A	7.5285 [8.0000]	94.1% { 93.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1212363	(4.30, N/A) (N/A, 0.00, N/A)	3145.1	N/A	3.6688 [4.0000]	91.7% { 93.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 718545	(5.07, N/A) (N/A, 0.00, N/A)	2491.8	N/A	1.7881 [2.0000]	89.4% { 95.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 632626	(5.78, N/A) (N/A, -0.01, N/A)	2591.1	N/A	1.8934 [2.0000]	94.7% { 97.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 764743	(6.44, N/A) (N/A, -0.01, N/A)	2966.6	N/A	1.8340 [2.0000]	91.7% { 93.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 329291	(7.05, N/A) (N/A, -0.01, N/A)	2716.1	N/A	0.9052 [1.0000]	90.5% { 91.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 414766	(7.64, N/A) (N/A, -0.01, N/A)	2090.9	N/A	0.9522 [1.0000]	95.2% { 94.5% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01216-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-28B (10)
 Acquired: 2023/03/28 - 21:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 416729	(8.20, N/A) (N/A, -0.01, N/A)	1547.5	N/A	0.9186 [1.0000]	91.9% { 91.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 385905	(8.64, N/A) (N/A, -0.01, N/A)	1252.0	N/A	0.9004 [1.0000]	90.0% { 95.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 380728	(9.08, N/A) (N/A, -0.01, N/A)	1832.0	N/A	0.9045 [1.0000]	90.5% { 90.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1760055	(5.01, N/A) (N/A, 0.00, N/A)	2888.7	N/A	1.9450 [2.0000]	97.3% { 91.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1025350	(6.53, N/A) (N/A, -0.01, N/A)	2671.1	N/A	1.9979 [2.0000]	99.9% { 95.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1897175	(7.82, N/A) (N/A, -0.01, N/A)	1523.0	N/A	1.8963 [2.0000]	94.8% { 101.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 358853	(4.86, N/A) (N/A, 0.00, N/A)	802.8	N/A	3.9119 [4.0000]	97.8% { 92.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 379482	(6.20, N/A) (N/A, -0.01, N/A)	620.3	N/A	3.5588 [4.0000]	89.0% { 82.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 438555	(7.38, N/A) (N/A, -0.01, N/A)	1267.0	N/A	3.6455 [4.0000]	91.1% { 90.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3389876	(9.79, N/A) (N/A, -0.01, N/A)	6929.0	N/A	1.8420 [2.0000]	92.1% { 95.3% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 758850	(10.39, N/A) (N/A, -0.01, N/A)	2924.2	N/A	1.8517 [2.0000]	92.6% { 95.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 699460	(10.55 , N/A) (N/A , -0.01 , N/A)	3169.7	N/A	1.9775 [2.0000]	98.9% { 99.2% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 887714	(7.78 , N/A) (N/A , -0.01 , N/A)	2261.1	N/A	3.9316 [4.0000]	98.3% { 106.1% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 637839	(8.07 , N/A) (N/A , -0.01 , N/A)	7245945.2	N/A	3.5606 [4.0000]	89.0% { 92.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2539588	(10.32 , N/A) (N/A , -0.01 , N/A)	2648.6	N/A	20.2145 [20.0000]	101.1% { 103.3% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3004231	(10.49 , N/A) (N/A , -0.01 , N/A)	1668.3	N/A	18.1363 [20.0000]	90.7% { 87.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1502643	(5.31 , N/A) (N/A , -0.01 , N/A)	3570.7	N/A	7.8377 [8.0000]	98.0% { 99.2% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315014**Laboratory ID:** SC01442-SCV1**Sequence:** SC01442**Standard ID:** 23C0366

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	8.51	6.4	30.00
PFPEA	4.00	4.16	4.0	30.00
PFHXA	2.00	2.07	3.7	30.00
PFHPA	2.00	2.09	4.4	30.00
PFOA	2.00	2.23	11.7	30.00
PFNA	2.00	2.23	11.4	30.00
PFDA	2.00	2.08	4.1	30.00
PFUnA	2.00	2.09	4.5	30.00
PFDOA	2.00	2.07	3.3	30.00
PFTRDA	2.00	2.28	13.9	30.00
PFTEDA	2.00	2.05	2.7	30.00
PFBS	1.77	1.91	7.8	30.00
PFPEs	1.88	2.09	11.4	30.00
PFHXS	1.83	1.84	0.8	30.00
PFHPS	1.91	1.99	3.9	30.00
PFOS	1.86	1.96	5.2	30.00
PFNS	1.92	2.10	9.3	30.00
PFDS	1.93	2.10	8.8	30.00
PFDOS	1.94	2.13	9.6	30.00
4:2FTS	7.50	8.80	17.4	30.00
6:2FTS	7.60	8.51	12.0	30.00
8:2FTS	7.68	8.82	14.9	30.00
PFOSA	2.00	2.17	8.7	30.00
NMeFOSA	8.00	8.84	10.5	30.00
NEtFOSA	8.00	7.19	-10.1	30.00
NMeFOSAA	2.00	2.17	8.4	30.00
NEtFOSAA	2.00	2.18	8.8	30.00

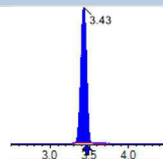
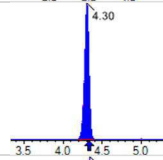
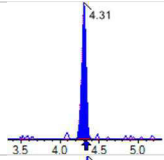
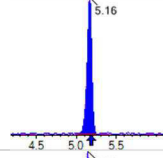
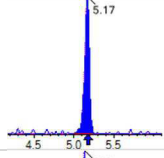
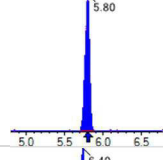
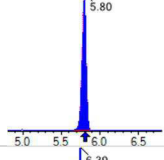
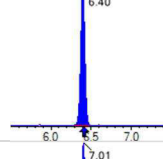
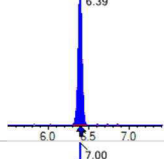
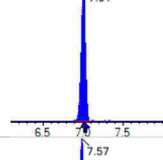
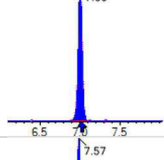
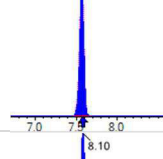
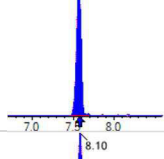
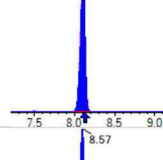
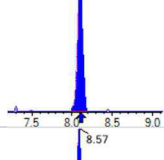
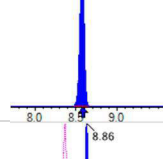
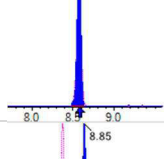
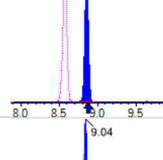
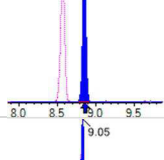
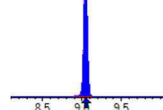
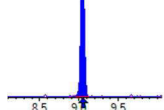
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315014**Laboratory ID:** SC01442-SCV1**Sequence:** SC01442**Standard ID:** 23C0366

NMeFOSE	8.00	8.70	8.7	30.00
NEtFOSE	8.00	8.88	11.0	30.00
HFPO-DA	4.00	4.28	6.9	30.00
ADONA	3.78	4.22	11.7	30.00
PFEESA	3.56	4.11	15.4	30.00
PFMPA	4.00	4.27	6.8	30.00
PFMBA	4.00	4.13	3.1	30.00
NFDHA	4.00	4.76	18.9	30.00
9CL-PF3ONS	3.74	4.04	8.0	30.00
11CL-PF3OUDS	3.78	4.33	14.5	30.00
3:3FTCA	8.00	7.90	-1.2	30.00
5:3FTCA	8.00	8.39	4.9	30.00
7:3FTCA	8.00	8.51	6.3	30.00
13C4-PFBA	8.00	7.37	-7.8	30.00
13C5-PFPEA	4.00	3.77	-5.7	30.00
13C5-PFHXA	2.00	1.75	-12.6	30.00
13C4-PFHPA	2.00	1.76	-11.9	30.00
13C8-PFOA	2.00	1.80	-10.0	30.00
13C9-PFNA	1.00	0.956	-4.4	30.00
13C6-PFDA	1.00	0.965	-3.5	30.00
13C7-PFUnA	1.00	0.967	-3.3	30.00
13C2-PFDOA	1.00	0.923	-7.7	30.00
13C2-PFTEDA	1.00	0.980	-2.0	30.00
13C3-PFBS	2.00	1.78	-10.9	30.00
13C3-PFHXS	2.00	1.83	-8.4	30.00
13C8-PFOS	2.00	1.77	-11.5	30.00
13C2-4:2FTS	4.00	3.02	-24.6	30.00
13C2-6:2FTS	4.00	3.38	-15.5	30.00
13C2-8:2FTS	4.00	3.05	-23.7	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315014**Laboratory ID:** SC01442-SCV1**Sequence:** SC01442**Standard ID:** 23C0366

13C8-PFOSA	2.00	1.89	-5.7	30.00
D3-NMEFOSA	2.00	1.79	-10.6	30.00
D5-NETFOSA	2.00	1.86	-7.2	30.00
D3-NMEFOSAA	4.00	3.40	-15.0	30.00
D5-NETFOSAA	4.00	3.28	-18.0	30.00
D7-NMEFOSE	20.0	19.5	-2.5	30.00
D9-NETFOSSE	20.0	19.8	-0.8	30.00
13C3-HFPO-DA	8.00	7.33	-8.4	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	(213.0 / 169.0) 983781	(3.43, 1.00) (0.00, N/A, 0.0)	199.3	N/A 0.0 0.0	8.5107	N/A			
PFPeA	(263.0 / 219.0) 950790 (263.0 / 69.0) 10669	(4.30, 1.00) (0.00, N/A, -0.2)	1576.1 205.9	0.0112 85.5 85.5	4.1608	N/A			
PFHxA	(313.0 / 269.0) 557731 (313.0 / 119.0) 56357	(5.16, 1.00) (0.00, N/A, -0.2)	650.6 667.7	0.1010 92.6 92.6	2.0744	N/A			
PFHpA	(363.0 / 319.0) 441349 (363.0 / 169.0) 139006	(5.80, 1.00) (0.00, N/A, -0.1)	2451.6 4102727.7	0.3150 103.2 103.2	2.0870	N/A			
PFOA	(413.0 / 369.0) 660710 (413.0 / 169.0) 208722	(6.40, 1.00) (0.00, N/A, 0.1)	1357.8 5402.4	0.3159 100.9 100.9	2.2345	N/A			
PFNA	(463.0 / 419.0) 578919 (463.0 / 169.0) 118193	(7.01, 1.00) (0.00, N/A, 0.2)	5401.1 1613.6	0.2042 95.6 95.6	2.2282	N/A			
PFDA	(513.0 / 469.0) 731326 (513.0 / 169.0) 88789	(7.57, 1.00) (0.00, N/A, -0.1)	1515.2 1755.9	0.1214 105.9 105.9	2.0816	N/A			
PFUnA	(563.0 / 519.0) 639012 (563.0 / 169.0) 71299	(8.10, 1.00) (0.00, N/A, 0.0)	1701.2 72846.6	0.1116 94.4 94.4	2.0890	N/A			
PFDoA	(613.0 / 569.0) 532305 (613.0 / 169.0) 92509	(8.57, 1.00) (0.00, N/A, 0.0)	1926.7 5242.9	0.1738 101.4 101.4	2.0668	N/A			
PFTrDA	(663.0 / 619.0) 534706 (663.0 / 169.0) 135706	(8.86, 1.03) (N/A, -0.01, 0.1)	2272.9 4493.2	0.2538 102.4 102.4	2.2787	N/A			
PFTeDA	(713.0 / 669.0) 535328 (713.0 / 169.0) 103638	(9.04, 1.00) (0.00, N/A, -0.1)	1527.4 658.6	0.1936 96.1 96.1	2.0539	N/A			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (10)
 Acquired: 2023/04/12 - 12:08

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	(299.0 / 80.0) 936830 (299.0 / 99.0) 629138	(5.11, 1.00) (0.00, N/A, -0.1)	18654.9 5092.1	0.6716 104.5 104.5	1.9079	N/A			
PFPeS	(349.0 / 80.0) 1605852 (349.0 / 99.0) 531618	(5.81, 0.90) (N/A, -0.01, 0.0)	8353.6 4795.6	0.3311 97.6 97.6	2.0947	N/A			
PFHxS	(399.0 / 80.0) 1204556 (399.0 / 99.0) 433769	(6.48, 1.00) (0.00, N/A, 0.0)	436874.1 6193321.1	0.3601 104.0 104.0	1.8440	N/A			
PFHpS	(449.0 / 80.0) 1307865 (449.0 / 99.0) 386652	(7.13, 0.92) (N/A, -0.01, 0.2)	173507.4 4634.4	0.2956 106.6 106.6	1.9854	N/A			
PFOS	(499.0 / 80.0) 1808104 (499.0 / 99.0) 402950	(7.73, 1.00) (0.00, N/A, 0.1)	1036.3 1621.4	0.2229 99.6 99.6	1.9558	N/A			
PFNS	(549.0 / 80.0) 1813786 (549.0 / 99.0) 432685	(8.29, 1.07) (N/A, -0.01, 0.1)	1230247.6 729156.9	0.2386 98.6 98.6	2.0994	N/A			
PFDS	(599.0 / 80.0) 2051380 (599.0 / 99.0) 454796	(8.71, 1.13) (N/A, -0.01, 0.0)	6475.7 10748074.2	0.2217 98.9 98.9	2.1004	N/A			
PFDoS	(699.0 / 80.0) 1596977 (699.0 / 99.0) 364935	(9.12, 1.18) (N/A, -0.01, 0.0)	3118.1 1781.1	0.2285 95.5 95.5	2.1257	N/A			
4:2FTS	(327.0 / 307.0) 1372013 (327.0 / 81.0) 816032	(4.93, 1.00) (0.00, N/A, -0.1)	2543.8 1077.8	0.5948 87.5 87.5	8.8047	N/A			
6:2FTS	(427.0 / 407.0) 977926 (427.0 / 81.0) 650984	(6.17, 1.00) (0.00, N/A, 0.0)	3169.9 2216.5	0.6657 94.5 94.5	8.5124	N/A			
8:2FTS	(527.0 / 507.0) 998595 (527.0 / 81.0) 659445	(7.33, 1.00) (0.00, N/A, 0.0)	7996.7 2129.8	0.6604 97.7 97.7	8.8225	N/A			

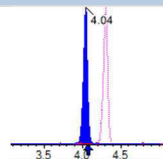
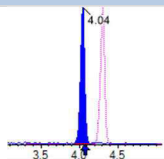
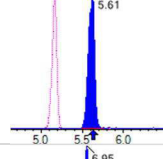
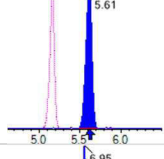
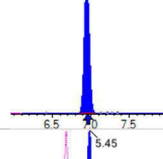
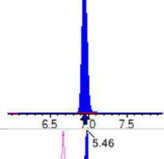
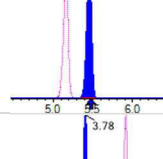
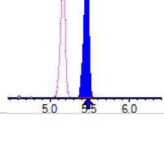
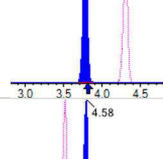
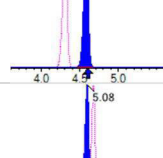
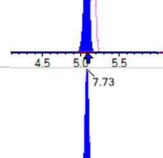
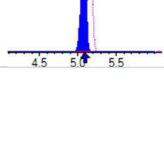
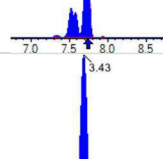
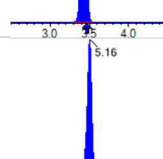
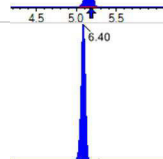
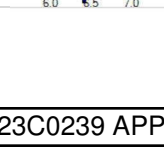


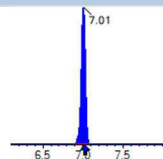
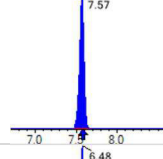
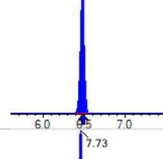
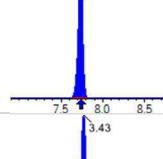
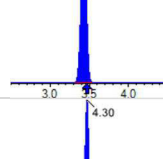
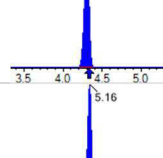
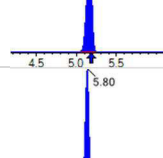
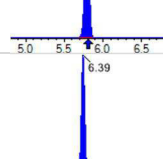
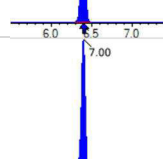
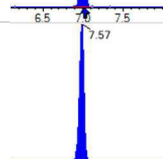
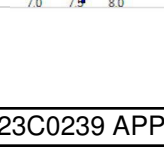
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

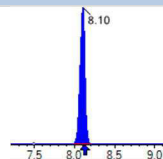
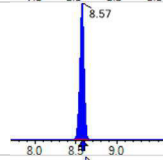
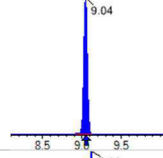
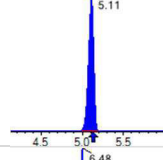
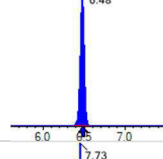
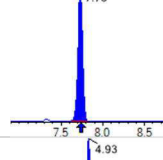
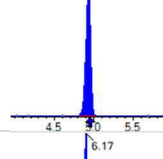
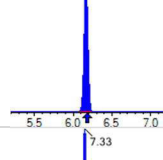
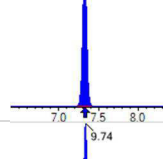
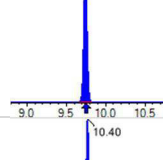
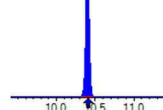
Sample I.D.: SC01442-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

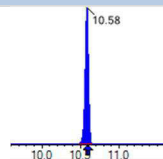
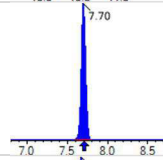
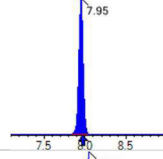
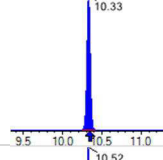
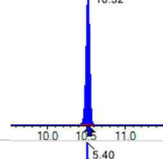
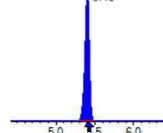
Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (10)
 Acquired: 2023/04/12 - 12:08

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
PFOSA	(498.0 / 78.0) 2691174 (498.0 / 478.0) 60808	(9.74, 1.00) (0.00, N/A, 0.0)	3728.2 508.5	0.0226 91.3 91.3	2.1736	N/A			
NMeFOSA	(512.0 / 219.0) 2096232 (512.0 / 169.0) 1568503	(10.40, 1.00) (0.00, N/A, 0.0)	5872.6 4984.5	0.7482 86.3 86.3	8.8402	N/A			
NEIFOSA	(526.0 / 219.0) 1849369 (526.0 / 169.0) 2099775	(10.59, 1.00) (0.00, N/A, 0.0)	7109.0 5367.7	1.1354 90.8 90.8	7.1893	N/A			
NMeFOSAA	(570.0 / 419.0) 309808 (570.0 / 483.0) 145828	(7.71, 1.00) (0.01, N/A, 0.1)	2726.7 230.8	0.4707 101.6 101.6	2.1685	N/A			
NEIFOSAA	(584.0 / 419.0) 256319 (584.0 / 526.0) 147518	(7.96, 1.00) (0.01, N/A, 0.1)	8159.1 699.0	0.5755 94.3 94.3	2.1764	N/A			
NMeFOSE	(616.0 / 59.0) 982993	(10.34, 1.00) (0.01, N/A, 0.0)	1602.6	N/A 0.0 0.0	8.6980	N/A			
NEtFOSE	(630.0 / 59.0) 1217145	(10.53, 1.00) (0.01, N/A, 0.0)	1913.3	N/A 0.0 0.0	8.8839	N/A			
HFPO-DA	(285.0 / 169.0) 595379 (285.0 / 185.0) 1693380	(5.41, 1.00) (0.00, N/A, 0.2)	2139.9 2745.1	2.8442 109.3 109.3	4.2756	N/A			
ADONA	(377.0 / 85.0) 2101119 (377.0 / 251.0) 203035	(6.02, 1.11) (N/A, -0.01, -0.1)	4851.6 1225.5	0.0966 97.4 97.4	4.2231	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 6048233 (533.0 / 353.0) 1808399	(8.15, 1.51) (N/A, -0.01, 0.0)	5194.5 2262.0	0.2990 103.0 103.0	4.0377	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 3833754 (633.0 / 453.0) 1263380	(8.90, 1.65) (N/A, -0.01, 0.0)	5978.6 3571.2	0.3295 98.3 98.3	4.3298	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) 66184 (241.0 / 117.0) 108977	(4.04, 0.94) (N/A, -0.02, -0.1)	46.1 42.9	1.6466 99.7 99.7	7.9040	N/A			
5:3FTCA	(341.0 / 236.7) 354490 (341.0 / 217.0) 616436	(5.61, 1.09) (N/A, -0.01, 0.0)	695.5 834.7	1.7389 110.9 110.9	8.3886	N/A			
7:3FTCA	(441.0 / 317.0) 629606 (441.0 / 337.0) 553885	(6.95, 1.35) (N/A, -0.01, 0.1)	1003.1 1674.6	0.8797 102.1 102.1	8.5079	N/A			
PFEESA	(315.0 / 135.0) 1388953 (315.0 / 83.0) 331829	(5.45, 1.06) (N/A, -0.01, -0.2)	3654.1 911.2	0.2389 97.9 97.9	4.1067	N/A			
PFMPA	(229.0 / 85.0) 207793	(3.78, 0.88) (N/A, -0.03, 0.0)	2630.0	N/A 0.0 0.0	4.2701	N/A			
PFMBA	(279.0 / 85.0) 735006	(4.58, 1.06) (N/A, -0.02, 0.0)	2818.1	N/A 0.0 0.0	4.1251	N/A			
NFDHA	(295.0 / 201.0) 653548 (295.0 / 85.0) 623805	(5.08, 0.98) (N/A, -0.01, 0.0)	1956.9 1746.2	0.9545 97.5 97.5	4.7555	N/A			
TDCA	(499.0 / 80.0) 1660060	(7.73, 1.00) (N/A, -0.01, 0.0)	15325.3	N/A 0.0 0.0	2.0863	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 135350	(3.43, N/A) (N/A, -0.03, N/A)	1664.4	N/A	1.1103 [1.0000]	111.0% { 113.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 225007	(5.16, N/A) (N/A, -0.01, N/A)	2035.8	N/A	1.1094 [1.0000]	110.9% { 114.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 353136	(6.40, N/A) (N/A, -0.01, N/A)	1905.3	N/A	1.1112 [1.0000]	111.1% { 109.6% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 313677	(7.01, N/A) (N/A, -0.01, N/A)	559.6	N/A	1.0335 [1.0000]	103.4% { 102.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 345166	(7.57, N/A) (N/A, -0.01, N/A)	37972.7	N/A	1.0638 [1.0000]	106.4% { 112.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 492118	(6.48, N/A) (N/A, -0.01, N/A)	3182.2	N/A	1.0988 [1.0000]	109.9% { 119.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 761893	(7.73, N/A) (N/A, -0.01, N/A)	3170.8	N/A	1.1203 [1.0000]	112.0% { 117.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1058275	(3.43, N/A) (N/A, -0.03, N/A)	5530.2	N/A	7.3745 [8.0000]	92.2% { 101.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 951141	(4.30, N/A) (N/A, -0.03, N/A)	3683.6	N/A	3.7739 [4.0000]	94.3% { 106.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 557439	(5.16, N/A) (N/A, -0.01, N/A)	3262.2	N/A	1.7478 [2.0000]	87.4% { 95.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 490663	(5.80, N/A) (N/A, -0.01, N/A)	1732.3	N/A	1.7613 [2.0000]	88.1% { 100.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 627208	(6.39, N/A) (N/A, -0.01, N/A)	4390.5	N/A	1.7995 [2.0000]	90.0% { 102.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 281681	(7.00, N/A) (N/A, -0.01, N/A)	2478.9	N/A	0.9558 [1.0000]	95.6% { 94.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 373785	(7.57, N/A) (N/A, -0.01, N/A)	49478.9	N/A	0.9653 [1.0000]	96.5% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 347656	(8.10, N/A) (N/A, -0.02, N/A)	2962.5	N/A	0.9672 [1.0000]	96.7% { 96.4% }			
13C2_PFDa_EIS	(615.0 / 570.0) 283969	(8.57, N/A) (N/A, -0.01, N/A)	3571.4	N/A	0.9227 [1.0000]	92.3% { 98.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 284384	(9.04, N/A) (N/A, -0.01, N/A)	1601.5	N/A	0.9799 [1.0000]	98.0% { 94.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1376782	(5.11, N/A) (N/A, -0.02, N/A)	2295.9	N/A	1.7820 [2.0000]	89.1% { 98.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 830970	(6.48, N/A) (N/A, -0.01, N/A)	2781.8	N/A	1.8319 [2.0000]	91.6% { 103.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 163867	(7.73, N/A) (N/A, -0.01, N/A)	1791.4	N/A	1.7701 [2.0000]	88.5% { 98.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 209905	(4.93, N/A) (N/A, -0.01, N/A)	974.7	N/A	3.0164 [4.0000]	75.4% { 84.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 268527	(6.17, N/A) (N/A, -0.01, N/A)	12638.9	N/A	3.3810 [4.0000]	84.5% { 91.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 320897	(7.33, N/A) (N/A, -0.01, N/A)	1597.0	N/A	3.0519 [4.0000]	76.3% { 89.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2826165	(9.74, N/A) (N/A, -0.01, N/A)	3156.1	N/A	1.8861 [2.0000]	94.3% { 108.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 571568	(10.40, N/A) (N/A, -0.01, N/A)	2511.9	N/A	1.7875 [2.0000]	89.4% { 109.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	(531.0 / 169.0) 489726	(10.58, N/A) (N/A, -0.01, N/A)	2813.4	N/A	1.8563 [2.0000]	92.8% { 106.4% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 672323	(7.70, N/A) (N/A, -0.01, N/A)	15010.1	N/A	3.3984 [4.0000]	85.0% { 99.9% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 532547	(7.95, N/A) (N/A, -0.02, N/A)	729167.0	N/A	3.2819 [4.0000]	82.0% { 99.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2070306	(10.33, N/A) (N/A, -0.01, N/A)	1551.5	N/A	19.5028 [20.0000]	97.5% { 108.4% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2782379	(10.52, N/A) (N/A, -0.01, N/A)	1283.8	N/A	19.8311 [20.0000]	99.2% { 110.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1319128	(5.40, N/A) (N/A, -0.01, N/A)	2607.1	N/A	7.3318 [8.0000]	91.6% { 102.2% }			

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

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC

SDG:

Client: AECOM

Project: Red Hill AFFF Assessment Sampling / 6069

Calibration: 2315014

Laboratory ID: SC01502-LCV1

Sequence: SC01502

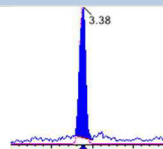
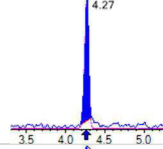
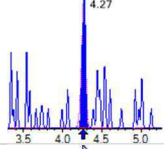
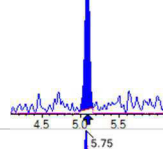
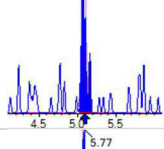
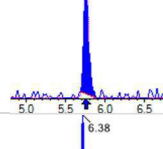
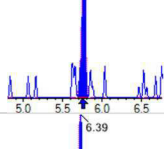
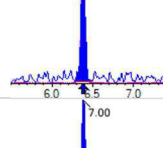
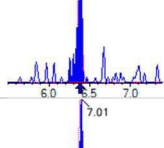
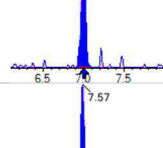
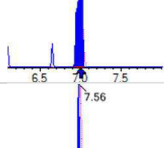
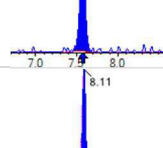
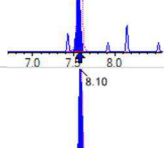
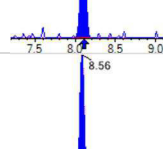
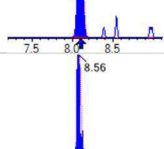
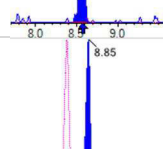
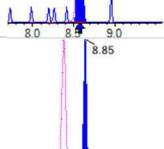
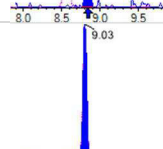
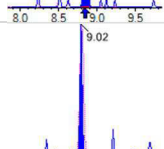
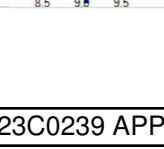
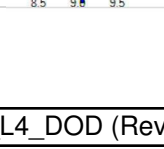
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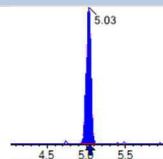
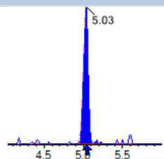
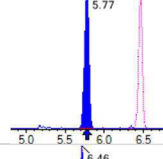
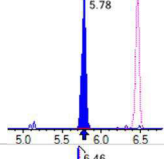
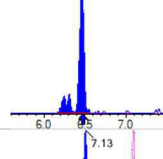
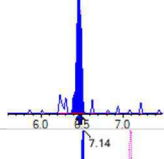
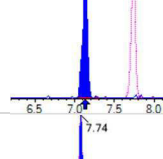
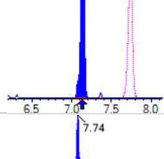
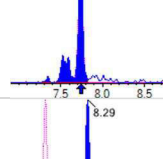
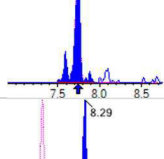
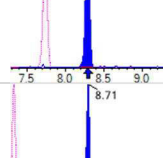
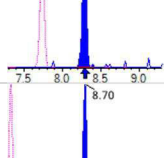
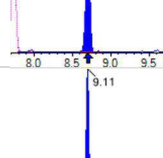
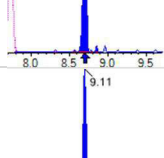
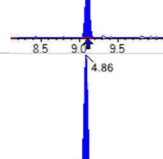
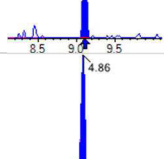
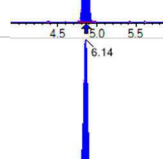
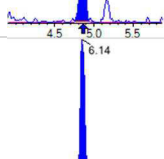
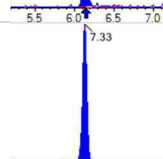
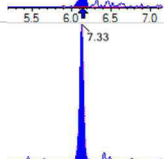

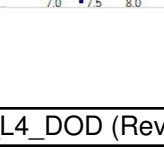
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.404	0.9	30.00
PFPEA	0.200	0.191	-4.7	30.00
PFHXA	0.100	0.145	45.3 *	30.00
PFHPA	0.100	0.128	28.3	30.00
PFOA	0.100	0.123	22.9	30.00
PFNA	0.100	0.0805	-19.5	30.00
PFDA	0.100	0.104	4.1	30.00
PFUnA	0.100	0.0971	-2.9	30.00
PFDOA	0.100	0.108	8.5	30.00
PFTRDA	0.100	0.0963	-3.7	30.00
PFTEDA	0.100	0.0875	-12.5	30.00
PFBS	0.0885	0.0992	12.1	30.00
PFPEs	0.0940	0.0889	-5.4	30.00
PFHXS	0.0915	0.0889	-2.8	30.00
PFHPS	0.0955	0.0961	0.6	30.00
PFOS	0.0930	0.111	19.4	30.00
PFNS	0.0960	0.0829	-13.6	30.00
PFDS	0.0965	0.0916	-5.1	30.00
PFDOS	0.0970	0.0851	-12.2	30.00
4:2FTS	0.375	0.394	5.0	30.00
6:2FTS	0.380	0.610	60.6 *	30.00
8:2FTS	0.384	0.411	7.0	30.00
PFOSA	0.100	0.0973	-2.7	30.00
NMeFOSA	0.400	0.413	3.1	30.00
NEtFOSA	0.400	0.417	4.4	30.00
NMeFOSAA	0.100	0.121	20.6	30.00
NEtFOSAA	0.100	0.0951	-4.9	30.00
NMeFOSE	0.400	0.432	8.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315014**Laboratory ID:** SC01502-LCV1**Sequence:** SC01502**Standard ID:** 23C0358

NEtFOSE	0.400	0.416	3.9	30.00
HFPO-DA	0.200	0.215	7.5	30.00
ADONA	0.189	0.204	7.8	30.00
PFEESA	0.178	0.185	3.8	30.00
PFMPA	0.200	0.245	22.4	30.00
PFMBA	0.200	0.232	16.0	30.00
NFDHA	0.200	0.178	-10.9	30.00
9CL-PF3ONS	0.187	0.210	12.2	30.00
11CL-PF3OUDS	0.189	0.187	-1.3	30.00
3:3FTCA	0.400	0.542	35.5 *	30.00
5:3FTCA	0.400	0.407	1.8	30.00
7:3FTCA	0.400	0.406	1.6	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	(213.0 / 169.0) 54837	(3.38, 1.00) (0.00, N/A, 0.0)	62.4	N/A 0.0 0.0	0.4035 [0.4000]	100.9%			
PFPeA	(263.0 / 219.0) 43442 (263.0 / 69.0) 817	(4.27, 1.00) (0.00, N/A, -0.1)	25.3 17.6	0.0188 143.2 160.6	0.1907 [0.2000]	95.3%			
PFHxA	(313.0 / 269.0) 44150 (313.0 / 119.0) 3668	(5.09, 1.00) (0.00, N/A, 0.9)	15.5 59.9	0.0831 76.1 85.3	0.1453 [0.1000]	145.3%			CV2,
PFHpA	(363.0 / 319.0) 33847 (363.0 / 169.0) 5399	(5.75, 1.00) (-0.01, N/A, -0.9)	17.9 28.9	0.1595 52.3 51.2	0.1283 [0.1000]	128.3%			
PFOA	(413.0 / 369.0) 41930 (413.0 / 169.0) 13690	(6.38, 1.00) (0.00, N/A, -0.6)	114.4 1837.3	0.3265 104.3 104.3	0.1229 [0.1000]	122.9%			
PFNA	(463.0 / 419.0) 24032 (463.0 / 169.0) 10860	(7.00, 1.00) (0.00, N/A, -0.4)	1269.6 2053.8	0.4519 211.6 219.2	0.0805 [0.1000]	80.5%			IR2,
PFDA	(513.0 / 469.0) 37303 (513.0 / 169.0) 4334	(7.57, 1.00) (0.00, N/A, 0.8)	125.6 380.0	0.1162 101.3 104.1	0.1041 [0.1000]	104.1%			
PFUnA	(563.0 / 519.0) 33383 (563.0 / 169.0) 6370	(8.11, 1.00) (0.01, N/A, 0.7)	201.5 3304.7	0.1908 161.5 167.6	0.0971 [0.1000]	97.1%			IR2,
PFDoA	(613.0 / 569.0) 30440 (613.0 / 169.0) 3804	(8.56, 1.00) (0.00, N/A, 0.5)	191.5 159.8	0.1250 72.9 84.6	0.1085 [0.1000]	108.5%			
PFTrDA	(663.0 / 619.0) 24623 (663.0 / 169.0) 5317	(8.85, 1.03) (N/A, 0.00, 0.0)	175.3 222.0	0.2160 87.1 83.1	0.0963 [0.1000]	96.3%			
PFTeDA	(713.0 / 669.0) 20880 (713.0 / 169.0) 2387	(9.03, 1.00) (0.00, N/A, 0.6)	197.3 133.7	0.1143 56.7 57.5	0.0875 [0.1000]	87.5%			

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	(299.0 / 80.0) 51452 (299.0 / 99.0) 28457	(5.03, 1.00) (0.00, N/A, -0.1)	1129.3 1204.3	0.5531 86.0 83.4	0.0992 [0.0885]	112.1%			
PFPeS	(349.0 / 80.0) 77681 (349.0 / 99.0) 36778	(5.77, 0.89) (N/A, 0.00, -0.2)	4000.3 93096.7	0.4734 139.6 136.2	0.0889 [0.0938]	94.8%			
PFHxS	(399.0 / 80.0) 66150 (399.0 / 99.0) 19937	(6.46, 1.00) (0.00, N/A, 0.0)	304.1 897815.2	0.3014 87.0 87.4	0.0889 [0.0911]	97.6%			
PFHpS	(449.0 / 80.0) 76402 (449.0 / 99.0) 22416	(7.13, 0.92) (N/A, 0.00, -0.3)	2743.0 1445.4	0.2934 105.8 106.0	0.0961 [0.0951]	101.0%			
PFOS	(499.0 / 80.0) 123941 (499.0 / 99.0) 28828	(7.74, 1.00) (0.00, N/A, -0.1)	256.5 1185.9	0.2326 103.9 101.0	0.1111 [0.0927]	119.8%			M12 ABK 4/16/23
PFNS	(549.0 / 80.0) 86468 (549.0 / 99.0) 21330	(8.29, 1.07) (N/A, 0.00, -0.1)	4189.3 1276.8	0.2467 101.9 101.6	0.0829 [0.0960]	86.4%			
PFDS	(599.0 / 80.0) 107949 (599.0 / 99.0) 25082	(8.71, 1.13) (N/A, 0.00, 0.2)	6266.5 10348.1	0.2324 103.7 103.8	0.0916 [0.0963]	95.1%			
PFDoS	(699.0 / 80.0) 77191 (699.0 / 99.0) 16919	(9.11, 1.18) (N/A, 0.00, -0.1)	648.5 217.6	0.2192 91.6 101.7	0.0851 [0.0970]	87.8%			
4:2FTS	(327.0 / 307.0) 77397 (327.0 / 81.0) 47009	(4.86, 1.00) (0.00, N/A, -0.1)	1195.7 133.9	0.6074 89.3 98.4	0.3936 [0.3738]	105.3%			
6:2FTS	(427.0 / 407.0) 92590 (427.0 / 81.0) 71913	(6.14, 1.00) (0.00, N/A, 0.2)	302.4 174.7	0.7767 110.3 107.6	0.6103 [0.3796]	160.8%			CV2,
8:2FTS	(527.0 / 507.0) 53758 (527.0 / 81.0) 44674	(7.33, 1.00) (0.00, N/A, 0.1)	546.1 384.7	0.8310 123.0 110.2	0.4107 [0.3833]	107.1%			

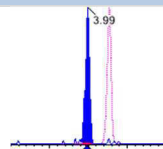
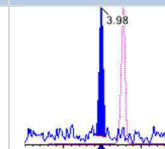
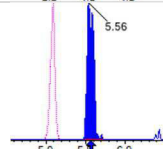
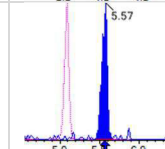
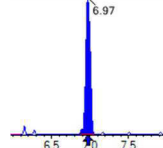
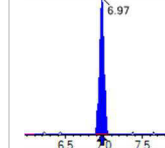
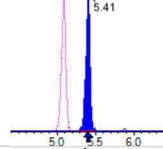
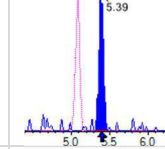
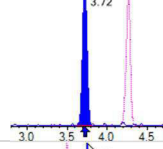
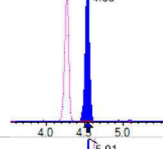
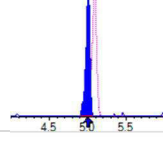
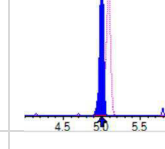
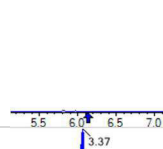
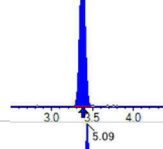
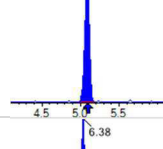


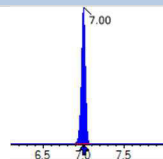
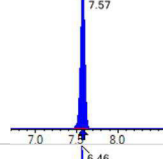
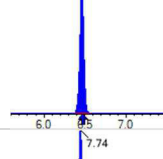
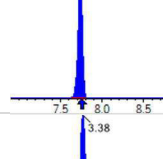
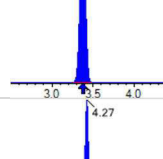
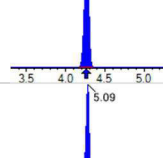
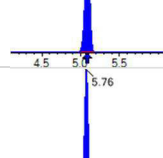
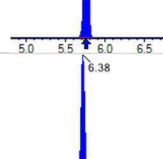
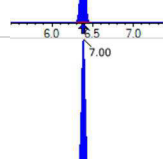
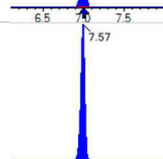
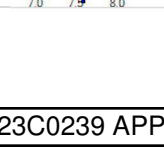
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

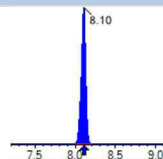
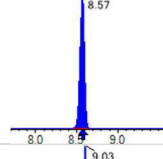
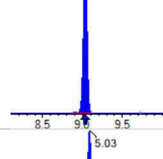
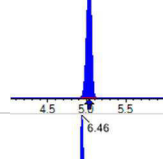
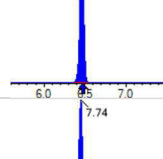
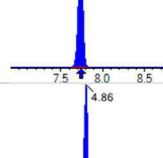
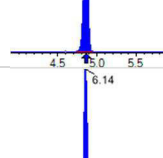
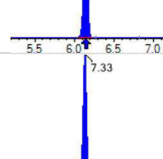
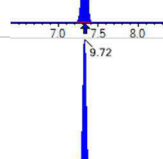
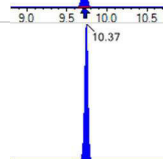
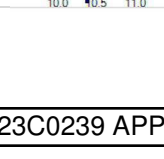
Sample I.D.: SC01502-LCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

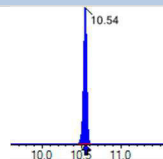
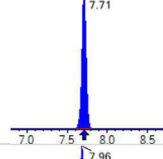
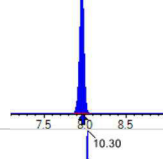
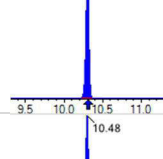
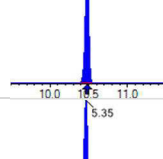
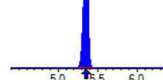
Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (2)
 Acquired: 2023/04/14 - 14:42

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
PFOSA	(498.0 / 78.0) 115243 (498.0 / 478.0) 3233	(9.72, 1.00) (0.00, N/A, -0.2)	594.7 64.0	0.0281 113.3 126.4	0.0973 [0.1000]	97.3%			
NMeFOSA	(512.0 / 219.0) 113249 (512.0 / 169.0) 100286	(10.37, 1.00) (0.00, N/A, 1.3)	973.3 947.4	0.8855 102.1 104.9	0.4126 [0.4000]	103.1%			
NEtFOSA	(526.0 / 219.0) 131976 (526.0 / 169.0) 172837	(10.54, 1.00) (-0.01, N/A, 0.9)	930.8 963.4	1.3096 104.8 105.1	0.4175 [0.4000]	104.4%			
NMeFOSAA	(570.0 / 419.0) 17780 (570.0 / 483.0) 6566	(7.71, 1.00) (0.00, N/A, 0.9)	32087.0 262378.2	0.3693 79.7 69.3	0.1206 [0.1000]	120.6%			
NEtFOSAA	(584.0 / 419.0) 12684 (584.0 / 526.0) 12058	(7.98, 1.00) (0.01, N/A, -0.2)	30746.0 12877.9	0.9507 155.7 165.9	0.0951 [0.1000]	95.1%			IR2,
NMeFOSE	(616.0 / 59.0) 50136	(10.31, 1.00) (0.01, N/A, 0.0)	139.3	N/A 0.0 0.0	0.4325 [0.4000]	108.1%			
NEtFOSE	(630.0 / 59.0) 63915	(10.49, 1.00) (0.01, N/A, 0.0)	160.7	N/A 0.0 0.0	0.4156 [0.4000]	103.9%			
HFPO-DA	(285.0 / 169.0) 30129 (285.0 / 185.0) 79789	(5.35, 1.00) (0.00, N/A, 0.0)	9679.5 469.5	2.6482 101.8 101.8	0.2149 [0.2000]	107.5%			
ADONA	(377.0 / 85.0) 102065 (377.0 / 251.0) 11236	(5.99, 1.12) (N/A, 0.00, 0.4)	1273.9 918.1	0.1101 110.9 108.4	0.2038 [0.1885]	108.1%			
9Cl-Pf3ONS	(531.0 / 351.0) 316382 (533.0 / 353.0) 98419	(8.15, 1.52) (N/A, 0.00, 0.0)	1093.4 289.2	0.3111 107.1 95.4	0.2098 [0.1867]	112.4%			
11Cl-Pf3OUDS	(631.0 / 451.0) 166275 (633.0 / 453.0) 61967	(8.89, 1.66) (N/A, 0.00, 0.0)	908.5 483.2	0.3727 111.2 110.1	0.1866 [0.1886]	98.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 4526 (241.0 / 117.0) 6620	(3.99, 0.93) (N/A, 0.01, 0.4)	21.0 14.0	1.4626 88.6 90.6	0.5422 [0.4000]	135.5%			CV2,
5:3FTCA	(341.0 / 236.7) 19436 (341.0 / 217.0) 37276	(5.56, 1.09) (N/A, 0.00, -0.3)	4490.7 130.9	1.9179 122.3 116.2	0.4070 [0.4000]	101.8%			
7:3FTCA	(441.0 / 317.0) 33974 (441.0 / 337.0) 36121	(6.97, 1.37) (N/A, 0.00, 0.2)	591.5 3229.0	1.0632 123.4 125.6	0.4063 [0.4000]	101.6%			
PFEESA	(315.0 / 135.0) 70588 (315.0 / 83.0) 18400	(5.41, 1.06) (N/A, 0.01, 0.8)	1786203.7 81.9	0.2607 106.8 107.6	0.1847 [0.1785]	103.5%			
PFMPA	(229.0 / 85.0) 11874	(3.72, 0.87) (N/A, 0.00, 0.0)	412.1	N/A 0.0 0.0	0.2447 [0.2000]	122.4%			
PFMBA	(279.0 / 85.0) 41229	(4.53, 1.06) (N/A, 0.00, 0.0)	4654.3	N/A 0.0 0.0	0.2321 [0.2000]	116.0%			
NFDHA	(295.0 / 201.0) 27681 (295.0 / 85.0) 28062	(5.01, 0.98) (N/A, 0.01, 0.4)	1714.6 6831.7	1.0138 103.5 106.1	0.1782 [0.2000]	89.1%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [0.1000]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 145201	(3.37, N/A) (N/A, 0.00, N/A)	1024.3	N/A	1.1911 [1.0000]	119.1% {115.1%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 226004	(5.09, N/A) (N/A, 0.00, N/A)	1006.5	N/A	1.1143 [1.0000]	111.4% {113.2%}			
13C4_PFOA_IIS	(417.0 / 372.0) 342504	(6.38, N/A) (N/A, 0.00, N/A)	13679.4	N/A	1.0778 [1.0000]	107.8% {103.4%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 365303	(7.00, N/A) (N/A, 0.00, N/A)	7274.9	N/A	1.2036 [1.0000]	120.4% { 113.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 360744	(7.57, N/A) (N/A, 0.00, N/A)	3733.3	N/A	1.1118 [1.0000]	111.2% { 109.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 510899	(6.46, N/A) (N/A, 0.00, N/A)	12884.2	N/A	1.1408 [1.0000]	114.1% { 104.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 795036	(7.74, N/A) (N/A, -0.01, N/A)	2119.3	N/A	1.1690 [1.0000]	116.9% { 112.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1244188	(3.38, N/A) (N/A, 0.01, N/A)	5439.9	N/A	8.0818 [8.0000]	101.0% { 114.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 948299	(4.27, N/A) (N/A, 0.00, N/A)	2853.3	N/A	3.7460 [4.0000]	93.6% { 110.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 629912	(5.09, N/A) (N/A, 0.00, N/A)	2203.8	N/A	1.9664 [2.0000]	98.3% { 107.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 611912	(5.76, N/A) (N/A, 0.01, N/A)	1847.7	N/A	2.1869 [2.0000]	109.3% { 112.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 723580	(6.38, N/A) (N/A, 0.00, N/A)	2721.1	N/A	2.1404 [2.0000]	107.0% { 109.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 323665	(7.00, N/A) (N/A, 0.00, N/A)	46241271.8	N/A	0.9431 [1.0000]	94.3% { 101.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 381138	(7.57, N/A) (N/A, 0.00, N/A)	3941.3	N/A	0.9418 [1.0000]	94.2% { 108.4% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 390795	(8.10, N/A) (N/A, 0.00, N/A)	7104.1	N/A	1.0403 [1.0000]	104.0% { 107.2% }			
13C2_PFDa_EIS	(615.0 / 570.0) 309373	(8.57, N/A) (N/A, 0.00, N/A)	15929.4	N/A	0.9618 [1.0000]	96.2% { 117.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 260399	(9.03, N/A) (N/A, 0.00, N/A)	1145.5	N/A	0.8585 [1.0000]	85.9% { 111.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1454786	(5.03, N/A) (N/A, 0.00, N/A)	3144.5	N/A	1.8137 [2.0000]	90.7% { 110.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 946629	(6.46, N/A) (N/A, 0.00, N/A)	2499.7	N/A	2.0102 [2.0000]	100.5% { 106.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1972126	(7.74, N/A) (N/A, 0.00, N/A)	3589.7	N/A	2.0475 [2.0000]	102.4% { 118.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 264894	(4.86, N/A) (N/A, 0.00, N/A)	1028.4	N/A	3.6667 [4.0000]	91.7% { 110.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 354614	(6.14, N/A) (N/A, 0.00, N/A)	1772.0	N/A	4.3008 [4.0000]	107.5% { 122.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 371084	(7.33, N/A) (N/A, 0.00, N/A)	1413.9	N/A	3.3995 [4.0000]	85.0% { 99.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2702273	(9.72, N/A) (N/A, 0.00, N/A)	4998.1	N/A	1.7282 [2.0000]	86.4% { 110.4% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 661669	(10.37, N/A) (N/A, 0.00, N/A)	2335.9	N/A	1.9831 [2.0000]	99.2% { 105.6% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 601837	(10.54, N/A) (N/A, 0.00, N/A)	2977.1	N/A	2.1861 [2.0000]	109.3% { 107.5% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 693774	(7.71, N/A) (N/A, -0.01, N/A)	2331.0	N/A	3.3607 [4.0000]	84.0% { 106.5% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 602863	(7.96, N/A) (N/A, 0.00, N/A)	4903.6	N/A	3.5603 [4.0000]	89.0% { 108.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2123684	(10.30, N/A) (N/A, 0.00, N/A)	1399.7	N/A	19.1716 [20.0000]	95.9% { 97.7% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3123137	(10.48, N/A) (N/A, 0.00, N/A)	1510.1	N/A	21.3318 [20.0000]	106.7% { 106.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1327851	(5.35, N/A) (N/A, 0.00, N/A)	2443.6	N/A	7.3477 [8.0000]	91.8% { 109.5% }			

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:

Sequence:

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23C0362

Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810
 Calibration: 2315014
 Sequence: SC01502

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01502-CCV1	PFBA	20.0	20.2	101	ng/mL	+/- 30.00%
	PFPEA	10.0	9.99	99.9	ng/mL	+/- 30.00%
	PFHXA	5.00	4.71	94.1	ng/mL	+/- 30.00%
	PFHPA	5.00	5.21	104	ng/mL	+/- 30.00%
	PFOA	5.00	5.23	105	ng/mL	+/- 30.00%
	PFNA	5.00	4.92	98.5	ng/mL	+/- 30.00%
	PFDA	5.00	5.07	101	ng/mL	+/- 30.00%
	PFUnA	5.00	4.52	90.5	ng/mL	+/- 30.00%
	PFDOA	5.00	5.92	118	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.68	93.7	ng/mL	+/- 30.00%
	PFTEDA	5.00	5.06	101	ng/mL	+/- 30.00%
	PFBS	4.42	4.23	95.6	ng/mL	+/- 30.00%
	PFPEs	4.70	4.74	101	ng/mL	+/- 30.00%
	PFHXS	4.58	4.64	101	ng/mL	+/- 30.00%
	PFHPS	4.78	5.32	111	ng/mL	+/- 30.00%
	PFOS	4.65	4.77	103	ng/mL	+/- 30.00%
	PFNS	4.80	5.04	105	ng/mL	+/- 30.00%
	PFDS	4.82	4.74	98.3	ng/mL	+/- 30.00%
	PFDOS	4.85	4.44	91.5	ng/mL	+/- 30.00%
	4:2FTS	18.8	19.8	105	ng/mL	+/- 30.00%
	6:2FTS	19.0	19.5	103	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.4	95.9	ng/mL	+/- 30.00%
	PFOSA	5.00	5.06	101	ng/mL	+/- 30.00%
	NMeFOSA	20.0	21.2	106	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.6	108	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.65	93.0	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.01	100	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.1	95.4	ng/mL	+/- 30.00%
	NEtFOSE	20.0	20.4	102	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.3	113	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0239

Client: AECOM

Project: Red Hill AFFF Assessment Sampling / 60697810

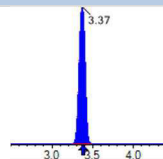
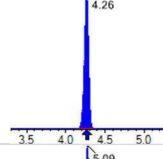
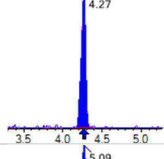
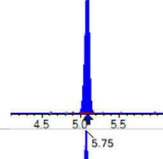
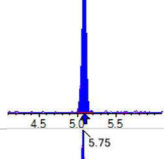
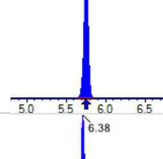
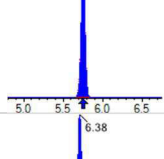
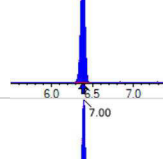
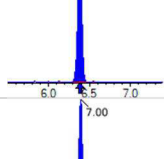
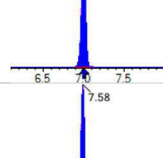
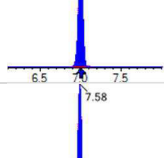
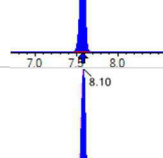
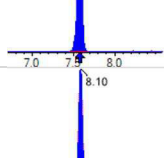
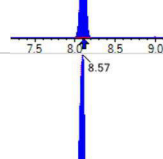
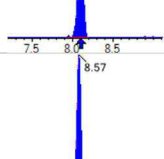
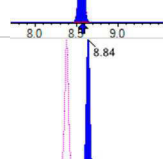
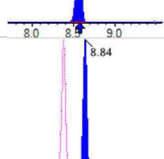
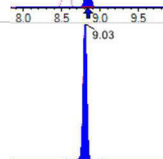
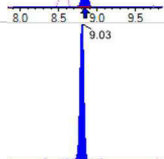
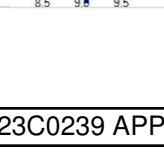
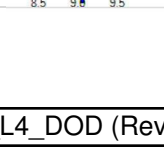
Instrument ID: Saphira

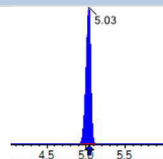
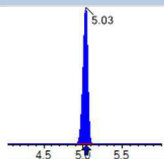
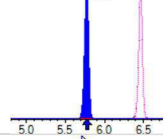
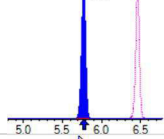
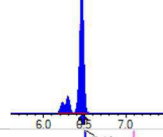
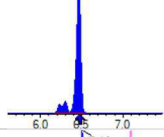
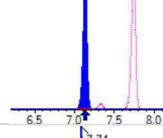
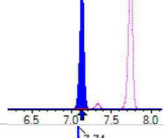
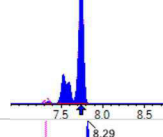
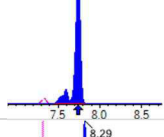
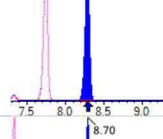
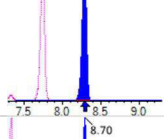
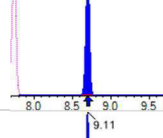
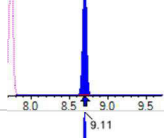
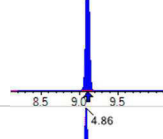
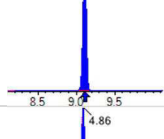
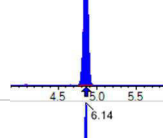
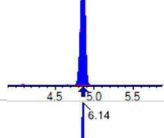
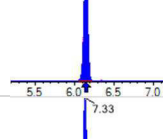
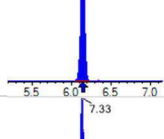
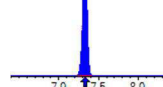
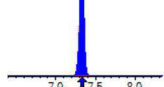
Calibration: 2315014

Standard ID: 23C0362

Sequence: SC01502

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01502-CCV1	ADONA	9.45	11.2	119	ng/mL	+/- 30.00%
	PFEESA	8.90	8.80	98.9	ng/mL	+/- 30.00%
	PFMPA	10.0	11.6	116	ng/mL	+/- 30.00%
	PFMBA	10.0	9.89	98.9	ng/mL	+/- 30.00%
	NFDHA	10.0	9.53	95.3	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	10.0	107	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.62	102	ng/mL	+/- 30.00%
	3:3FTCA	20.0	22.6	113	ng/mL	+/- 30.00%
	5:3FTCA	20.0	21.2	106	ng/mL	+/- 30.00%
	7:3FTCA	20.0	20.9	104	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	(213.0 / 169.0) 2403967	(3.37, 1.00) (0.00, N/A, 0.0)	199.1	N/A 0.0 0.0	20.2467 [20.0000]	101.2%			
PFPeA	(263.0 / 219.0) 2063653 (263.0 / 69.0) 24158	(4.26, 1.00) (0.00, N/A, -0.1)	3101.3 348.9	0.0117 89.2 100.0	9.9876 [10.0000]	99.9%			
PFHxA	(313.0 / 269.0) 1332027 (313.0 / 119.0) 129705	(5.09, 1.00) (0.00, N/A, 0.1)	1202.1 851.1	0.0974 89.2 100.0	4.7069 [5.0000]	94.1%			
PFHpA	(363.0 / 319.0) 1225102 (363.0 / 169.0) 381367	(5.75, 1.00) (0.00, N/A, 0.1)	3705.8 3534326.9	0.3113 102.0 100.0	5.2089 [5.0000]	104.2%			
PFOA	(413.0 / 369.0) 1629177 (413.0 / 169.0) 510202	(6.38, 1.00) (0.00, N/A, 0.1)	2061.7 4510.9	0.3132 100.0 100.0	5.2341 [5.0000]	104.7%			
PFNA	(463.0 / 419.0) 1449915 (463.0 / 169.0) 298971	(7.00, 1.00) (0.00, N/A, 0.0)	10503.9 11290.3	0.2062 96.6 100.0	4.9233 [5.0000]	98.5%			
PFDA	(513.0 / 469.0) 1674769 (513.0 / 169.0) 186826	(7.58, 1.00) (0.00, N/A, 0.0)	2597.5 2162.2	0.1116 97.3 100.0	5.0698 [5.0000]	101.4%			
PFUnA	(563.0 / 519.0) 1450990 (563.0 / 169.0) 165187	(8.10, 1.00) (0.00, N/A, 0.2)	3337.5 4970.7	0.1138 96.3 100.0	4.5229 [5.0000]	90.5%			
PFDoA	(613.0 / 569.0) 1414139 (613.0 / 169.0) 208998	(8.57, 1.00) (0.01, N/A, 0.2)	3455.2 1239.1	0.1478 86.2 100.0	5.9185 [5.0000]	118.4%			
PFTTrDA	(663.0 / 619.0) 1019648 (663.0 / 169.0) 265000	(8.84, 1.03) (N/A, 0.00, 0.0)	2575.4 2190.8	0.2599 104.9 100.0	4.6838 [5.0000]	93.7%			
PFTeDA	(713.0 / 669.0) 1080005 (713.0 / 169.0) 214810	(9.03, 1.00) (0.00, N/A, 0.1)	2375.8 757.4	0.1989 98.7 100.0	5.0582 [5.0000]	101.2%			

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	(299.0 / 80.0) 1990624 (299.0 / 99.0) 1319463	(5.03, 1.00) (0.00, N/A, 0.0)	790646.7 9524.0	0.6628 103.1 100.0	4.2258 [4.4237]	95.5%			
PFPeS	(349.0 / 80.0) 3887383 (349.0 / 99.0) 1351134	(5.77, 0.89) (N/A, 0.00, 0.0)	2213778.1 6136.7	0.3476 102.5 100.0	4.7384 [4.6919]	101.0%			
PFHxS	(399.0 / 80.0) 3240899 (399.0 / 99.0) 1117261	(6.46, 1.00) (0.00, N/A, 0.0)	29334.1 716979.7	0.3447 99.5 100.0	4.6360 [4.5549]	101.8%			
PFHpS	(449.0 / 80.0) 3564229 (449.0 / 99.0) 986614	(7.13, 0.92) (N/A, 0.00, 0.0)	27959440.8 867463.6	0.2768 99.8 100.0	5.3227 [4.7570]	111.9%			
PFOS	(499.0 / 80.0) 4481063 (499.0 / 99.0) 1031937	(7.74, 1.00) (0.00, N/A, 0.1)	2063.0 9006.5	0.2303 102.9 100.0	4.7683 [4.6375]	102.8%			
PFNS	(549.0 / 80.0) 4427707 (549.0 / 99.0) 1074758	(8.29, 1.07) (N/A, 0.00, 0.0)	28852.9 10175136.4	0.2427 100.3 100.0	5.0417 [4.7994]	105.0%			
PFDS	(599.0 / 80.0) 4702035 (599.0 / 99.0) 1052398	(8.70, 1.12) (N/A, 0.00, 0.0)	6906.7 6823.7	0.2238 99.9 100.0	4.7361 [4.8155]	98.4%			
PFDoS	(699.0 / 80.0) 3388097 (699.0 / 99.0) 730544	(9.11, 1.18) (N/A, 0.00, 0.0)	2958.6 2705.3	0.2156 90.1 100.0	4.4364 [4.8478]	91.5%			
4:2FTS	(327.0 / 307.0) 3510678 (327.0 / 81.0) 2166696	(4.86, 1.00) (0.00, N/A, 0.0)	5354.7 2326.7	0.6172 90.8 100.0	19.7716 [18.6906]	105.8%			
6:2FTS	(427.0 / 407.0) 2411125 (427.0 / 81.0) 1741091	(6.14, 1.00) (0.00, N/A, 0.0)	3020.3 2777.2	0.7221 102.5 100.0	19.5103 [18.9808]	102.8%			
8:2FTS	(527.0 / 507.0) 2415410 (527.0 / 81.0) 1821702	(7.33, 1.00) (0.00, N/A, 0.0)	3188.8 3634.8	0.7542 111.6 100.0	18.4062 [19.1658]	96.0%			

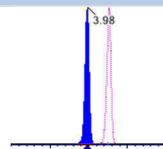
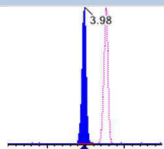
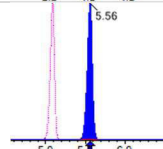
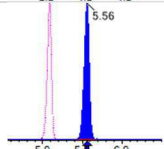
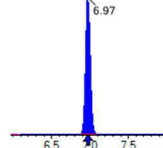
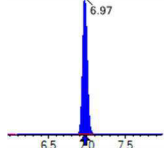
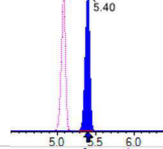
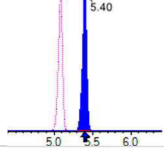
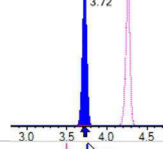
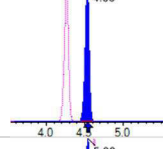
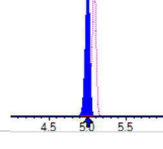
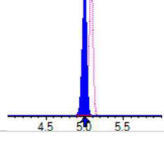
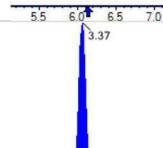
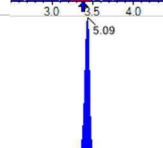
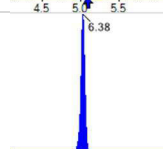


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (3)
 Acquired: 2023/04/14 - 14:55

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) 5426961 (498.0 / 478.0) 120484	(9.72, 1.00) (0.00, N/A, 0.0)	3790.2 1074.3	0.0222 89.7 100.0	5.0600 [5.0000]	101.2%			
NMeFOSA	(512.0 / 219.0) 5514935 (512.0 / 169.0) 4655993	(10.37, 1.00) (0.00, N/A, 1.3)	5284.5 5120.1	0.8443 97.3 100.0	21.2072 [20.0000]	106.0%			
NEIFOSA	(526.0 / 219.0) 6356064 (526.0 / 169.0) 7920101	(10.54, 1.00) (-0.01, N/A, 1.0)	7424.6 8364.1	1.2461 99.7 100.0	21.6086 [20.0000]	108.0%			
NMeFOSAA	(570.0 / 419.0) 643930 (570.0 / 483.0) 343022	(7.72, 1.00) (0.00, N/A, -0.1)	2492.6 611.7	0.5327 115.0 100.0	4.6506 [5.0000]	93.0%			
NEIFOSAA	(584.0 / 419.0) 613867 (584.0 / 526.0) 351865	(7.97, 1.00) (0.01, N/A, 0.1)	16293.9 2557.6	0.5732 93.9 100.0	5.0075 [5.0000]	100.1%			
NMeFOSE	(616.0 / 59.0) 2264439	(10.31, 1.00) (0.01, N/A, 0.0)	1930.0	N/A 0.0 0.0	19.0861 [20.0000]	95.4%			
NEtFOSE	(630.0 / 59.0) 2941723	(10.49, 1.00) (0.01, N/A, 0.0)	1375.5	N/A 0.0 0.0	20.3991 [20.0000]	102.0%			
HFPO-DA	(285.0 / 169.0) 1442014 (285.0 / 185.0) 3751861	(5.35, 1.00) (0.00, N/A, 0.0)	3148.9 3863.7	2.6018 100.0 100.0	11.2636 [10.0000]	112.6%			
ADONA	(377.0 / 85.0) 5129372 (377.0 / 251.0) 521134	(5.99, 1.12) (N/A, 0.00, 0.0)	5662.4 2569.0	0.1016 102.4 100.0	11.2136 [9.4270]	119.0%			
9CI-Pf3ONS	(531.0 / 351.0) 13828833 (533.0 / 353.0) 4507107	(8.15, 1.52) (N/A, 0.00, 0.1)	3913.3 3433.9	0.3259 112.2 100.0	10.0414 [9.3325]	107.6%			
11CI-PF3OUDS	(631.0 / 451.0) 7831262 (633.0 / 453.0) 2650740	(8.89, 1.66) (N/A, 0.00, 0.0)	4262.2 5241.2	0.3385 101.0 100.0	9.6202 [9.4321]	102.0%			

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) 170761 (241.0 / 117.0) 275647	(3.98, 0.93) (N/A, 0.00, 0.0)	51.4 56.9	1.6142 97.8 100.0	22.5540 [20.0000]	112.8%			
5:3FTCA	(341.0 / 236.7) 942754 (341.0 / 217.0) 1556545	(5.56, 1.09) (N/A, 0.00, 0.1)	1165.3 1338.2	1.6511 105.3 100.0	21.1956 [20.0000]	106.0%			
7:3FTCA	(441.0 / 317.0) 1624010 (441.0 / 337.0) 1374176	(6.97, 1.37) (N/A, 0.00, 0.0)	1678.0 2133.3	0.8462 98.2 100.0	20.8501 [20.0000]	104.3%			
PFEESA	(315.0 / 135.0) 3132678 (315.0 / 83.0) 759089	(5.40, 1.06) (N/A, 0.00, -0.1)	2364.5 1810.4	0.2423 99.3 100.0	8.8001 [8.9246]	98.6%			
PFMPA	(229.0 / 85.0) 511976	(3.72, 0.87) (N/A, 0.00, 0.0)	4119.2	N/A 0.0 0.0	11.6357 [10.0000]	116.4%			
PFMBA	(279.0 / 85.0) 1593277	(4.53, 1.06) (N/A, 0.00, 0.0)	5191.1	N/A 0.0 0.0	9.8895 [10.0000]	98.9%			
NFDHA	(295.0 / 201.0) 1378748 (295.0 / 85.0) 1317390	(5.00, 0.98) (N/A, 0.00, 0.0)	3744.2 3659.5	0.9555 97.6 100.0	9.5316 [10.0000]	95.3%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [5.0000]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 126174	(3.37, N/A) (N/A, 0.00, N/A)	1047.8	N/A	1.0350 [1.0000]	103.5% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 199732	(5.09, N/A) (N/A, 0.00, N/A)	36139.0	N/A	0.9848 [1.0000]	98.5% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 331194	(6.38, N/A) (N/A, 0.00, N/A)	2164.2	N/A	1.0422 [1.0000]	104.2% { 100.0% }			

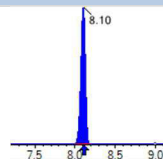
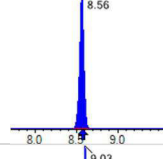
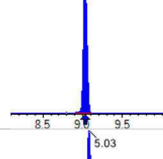
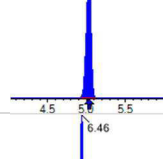
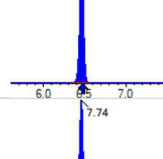
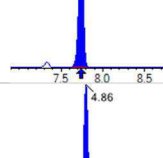
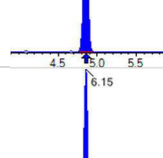
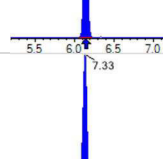
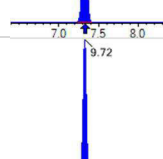
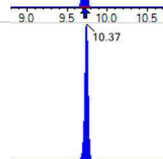
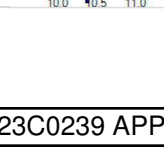


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (3)
 Acquired: 2023/04/14 - 14:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 320860	(7.00, N/A) (N/A, 0.00, N/A)	3339.5	N/A	1.0572 [1.0000]	105.7% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 328605	(7.58, N/A) (N/A, 0.00, N/A)	5042.7	N/A	1.0127 [1.0000]	101.3% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 488091	(6.47, N/A) (N/A, 0.00, N/A)	27764.7	N/A	1.0898 [1.0000]	109.0% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 709566	(7.74, N/A) (N/A, 0.00, N/A)	2621.1	N/A	1.0434 [1.0000]	104.3% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1087026	(3.37, N/A) (N/A, 0.00, N/A)	4297.0	N/A	8.1257 [8.0000]	101.6% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 860018	(4.26, N/A) (N/A, 0.00, N/A)	3005.1	N/A	3.8441 [4.0000]	96.1% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 586725	(5.08, N/A) (N/A, 0.00, N/A)	2679.3	N/A	2.0725 [2.0000]	103.6% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 545701	(5.75, N/A) (N/A, 0.00, N/A)	5255.0	N/A	2.2068 [2.0000]	110.3% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 660232	(6.38, N/A) (N/A, 0.00, N/A)	3096.8	N/A	2.0197 [2.0000]	101.0% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 319280	(7.00, N/A) (N/A, 0.00, N/A)	8334.2	N/A	1.0591 [1.0000]	105.9% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 351449	(7.58, N/A) (N/A, 0.00, N/A)	1979.2	N/A	0.9534 [1.0000]	95.3% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 364614	(8.10, N/A) (N/A, 0.00, N/A)	5835.0	N/A	1.0655 [1.0000]	106.5% { 100.0% }			
13C2_PFDa_EIS	(615.0 / 570.0) 263444	(8.56, N/A) (N/A, 0.00, N/A)	6436.4	N/A	0.8991 [1.0000]	89.9% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 232972	(9.03, N/A) (N/A, 0.00, N/A)	1338.2	N/A	0.8432 [1.0000]	84.3% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1320830	(5.03, N/A) (N/A, 0.00, N/A)	3163.0	N/A	1.7237 [2.0000]	86.2% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 889273	(6.46, N/A) (N/A, 0.00, N/A)	4033.4	N/A	1.9766 [2.0000]	98.8% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1660880	(7.74, N/A) (N/A, 0.00, N/A)	2213.2	N/A	1.9321 [2.0000]	96.6% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 239181	(4.86, N/A) (N/A, 0.00, N/A)	1303.9	N/A	3.4655 [4.0000]	86.6% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 288862	(6.15, N/A) (N/A, 0.00, N/A)	1985.2	N/A	3.6670 [4.0000]	91.7% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 372044	(7.33, N/A) (N/A, 0.00, N/A)	1735.7	N/A	3.5675 [4.0000]	89.2% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2448216	(9.72, N/A) (N/A, 0.00, N/A)	3547.0	N/A	1.7543 [2.0000]	87.7% { 100.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 626824	(10.37, N/A) (N/A, 0.00, N/A)	2743.4	N/A	2.1049 [2.0000]	105.2% { 100.0% }			



Chemist: HGH
Instrument: Saphira

Sample I.D.: SC01502-CCV1

DF, IV: 1, 10.0µL

Quant Method: 1633 - S2023-04-12A

Path: S2023-04-14A (3)

Type: Sciex Q3 5500

Acquisition Method: 1633 2023-03-28.dam

Acquired: 2023/04/14 - 14:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 559986	(10.55 , N/A) (N/A , 0.00 , N/A)	2757.9	N/A	2.2791 [2.0000]	114.0% { 100.0% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 651591	(7.72 , N/A) (N/A , 0.00 , N/A)	2102.1	N/A	3.5365 [4.0000]	88.4% { 100.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 554337	(7.97 , N/A) (N/A , 0.00 , N/A)	4325.8	N/A	3.6681 [4.0000]	91.7% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2173424	(10.30 , N/A) (N/A , 0.00 , N/A)	1176.9	N/A	21.9840 [20.0000]	109.9% { 100.0% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2928648	(10.48 , N/A) (N/A , 0.00 , N/A)	1360.5	N/A	22.4129 [20.0000]	112.1% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1212777	(5.35 , N/A) (N/A , 0.00 , N/A)	2971.9	N/A	7.5937 [8.0000]	94.9% { 100.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23C0362

Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810
 Calibration: 2315014
 Sequence: SC01502

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01502-CCV2	PFBA	20.0	20.0	99.9	ng/mL	+/- 30.00%
	PFPEA	10.0	10.0	100	ng/mL	+/- 30.00%
	PFHXA	5.00	4.95	99.0	ng/mL	+/- 30.00%
	PFHPA	5.00	5.04	101	ng/mL	+/- 30.00%
	PFOA	5.00	4.93	98.6	ng/mL	+/- 30.00%
	PFNA	5.00	5.31	106	ng/mL	+/- 30.00%
	PFDA	5.00	4.92	98.3	ng/mL	+/- 30.00%
	PFUnA	5.00	4.83	96.5	ng/mL	+/- 30.00%
	PFDOA	5.00	5.26	105	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.79	95.7	ng/mL	+/- 30.00%
	PFTEDA	5.00	5.02	100	ng/mL	+/- 30.00%
	PFBS	4.42	4.62	104	ng/mL	+/- 30.00%
	PFPEs	4.70	4.88	104	ng/mL	+/- 30.00%
	PFHXS	4.58	4.98	109	ng/mL	+/- 30.00%
	PFHPS	4.78	5.62	118	ng/mL	+/- 30.00%
	PFOS	4.65	4.83	104	ng/mL	+/- 30.00%
	PFNS	4.80	5.09	106	ng/mL	+/- 30.00%
	PFDS	4.82	4.86	101	ng/mL	+/- 30.00%
	PFDOS	4.85	4.73	97.5	ng/mL	+/- 30.00%
	4:2FTS	18.8	20.7	110	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.3	96.1	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.1	99.6	ng/mL	+/- 30.00%
	PFOSA	5.00	5.49	110	ng/mL	+/- 30.00%
	NMeFOSA	20.0	21.4	107	ng/mL	+/- 30.00%
	NEtFOSA	20.0	20.8	104	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.18	104	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.92	98.4	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.9	99.5	ng/mL	+/- 30.00%
	NEtFOSE	20.0	20.5	102	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.4	104	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Instrument ID:	Saphira	Calibration:	2315014
Standard ID:	23C0362	Sequence:	SC01502

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01502-CCV2	ADONA	9.45	10.8	114	ng/mL	+/- 30.00%
	PFEESA	8.90	8.93	100	ng/mL	+/- 30.00%
	PFMPA	10.0	10.9	109	ng/mL	+/- 30.00%
	PFMBA	10.0	9.14	91.4	ng/mL	+/- 30.00%
	NFDHA	10.0	10.1	101	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	10.3	110	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	10.1	106	ng/mL	+/- 30.00%
	3:3FTCA	20.0	22.1	111	ng/mL	+/- 30.00%
	5:3FTCA	20.0	22.3	112	ng/mL	+/- 30.00%
	7:3FTCA	20.0	20.8	104	ng/mL	+/- 30.00%



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (32)
 Acquired: 2023/04/14 - 21:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2280771	(3.40, 1.00) (0.00, N/A, 0.0)	187.4	N/A 0.0 0.0	19.9895 [20.0000]	99.9%			
PFPeA	(263.0 / 219.0) 2008100 (263.0 / 69.0) 24386	(4.29, 1.00) (0.00, N/A, 0.0)	3102.9 397.0	0.0121 92.5 103.7	10.0128 [10.0000]	100.1%			
PFHxA	(313.0 / 269.0) 1289703 (313.0 / 119.0) 114645	(5.11, 1.00) (0.00, N/A, -0.3)	1553.1 21988.5	0.0889 81.5 91.3	4.9486 [5.0000]	99.0%			
PFHpA	(363.0 / 319.0) 1075891 (363.0 / 169.0) 318383	(5.77, 1.00) (0.00, N/A, 0.1)	3489.0 5563.7	0.2959 96.9 95.1	5.0361 [5.0000]	100.7%			
PFOA	(413.0 / 369.0) 1486289 (413.0 / 169.0) 482893	(6.39, 1.00) (0.00, N/A, -0.1)	3399.1 11111.6	0.3249 103.8 103.7	4.9293 [5.0000]	98.6%			
PFNA	(463.0 / 419.0) 1268398 (463.0 / 169.0) 272580	(7.01, 1.00) (0.00, N/A, 0.0)	32645.2 288288.7	0.2149 100.6 104.2	5.3119 [5.0000]	106.2%			
PFDA	(513.0 / 469.0) 1564218 (513.0 / 169.0) 174620	(7.58, 1.00) (0.00, N/A, 0.1)	2788.7 5014.4	0.1116 97.4 100.1	4.9152 [5.0000]	98.3%			
PFUnA	(563.0 / 519.0) 1419086 (563.0 / 169.0) 179695	(8.10, 1.00) (0.00, N/A, -0.1)	2728.0 1896.7	0.1266 107.2 111.2	4.8268 [5.0000]	96.5%			
PFDoA	(613.0 / 569.0) 1254017 (613.0 / 169.0) 198260	(8.57, 1.00) (0.00, N/A, 0.1)	2948.2 1482.6	0.1581 92.3 107.0	5.2577 [5.0000]	105.2%			
PFTrDA	(663.0 / 619.0) 1040103 (663.0 / 169.0) 274178	(8.84, 1.03) (N/A, 0.00, -0.1)	3165.6 2017.4	0.2636 106.4 101.4	4.7863 [5.0000]	95.7%			
PFTeDA	(713.0 / 669.0) 1075895 (713.0 / 169.0) 202359	(9.03, 1.00) (0.00, N/A, 0.0)	2363.6 1262.3	0.1881 93.3 94.6	5.0199 [5.0000]	100.4%			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (32)
 Acquired: 2023/04/14 - 21:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2081464 (299.0 / 99.0) 1255916	(5.06, 1.00) (0.00, N/A, -0.1)	37521.0 18940.6	0.6034 93.9 91.0	4.6157 [4.4237]	104.3%			
PFPeS	(349.0 / 80.0) 3702598 (349.0 / 99.0) 1286129	(5.79, 0.89) (N/A, 0.02, 0.1)	5600.9 1735836.7	0.3474 102.4 99.9	4.8772 [4.6919]	103.9%			
PFHxS	(399.0 / 80.0) 3219128 (399.0 / 99.0) 1085379	(6.47, 1.00) (0.00, N/A, 0.1)	2584.8 11096208.9	0.3372 97.4 97.8	4.9763 [4.5549]	109.3%			
PFHpS	(449.0 / 80.0) 3401134 (449.0 / 99.0) 904422	(7.14, 0.92) (N/A, 0.01, -0.1)	7165.6 17223.4	0.2659 95.9 96.1	5.6228 [4.7570]	118.2%			
PFOS	(499.0 / 80.0) 4103256 (499.0 / 99.0) 924078	(7.74, 1.00) (0.00, N/A, 0.0)	2061.1 5006.7	0.2252 100.6 97.8	4.8336 [4.6375]	104.2%			
PFNS	(549.0 / 80.0) 4035593 (549.0 / 99.0) 977307	(8.28, 1.07) (N/A, 0.00, -0.1)	51554.9 4812.4	0.2422 100.1 99.8	5.0870 [4.7994]	106.0%			
PFDS	(599.0 / 80.0) 4362656 (599.0 / 99.0) 994334	(8.70, 1.12) (N/A, 0.00, -0.1)	9728.2 29395.1	0.2279 101.7 101.8	4.8646 [4.8155]	101.0%			
PFDoS	(699.0 / 80.0) 3261899 (699.0 / 99.0) 746746	(9.11, 1.18) (N/A, 0.00, 0.0)	5871.0 2399.1	0.2289 95.7 106.2	4.7283 [4.8478]	97.5%			
4:2FTS	(327.0 / 307.0) 3764374 (327.0 / 81.0) 2117149	(4.88, 1.00) (0.00, N/A, 0.0)	6173.5 2015.6	0.5624 82.7 91.1	20.7183 [18.6906]	110.8%			
6:2FTS	(427.0 / 407.0) 2446197 (427.0 / 81.0) 1731565	(6.15, 1.00) (0.00, N/A, 0.0)	2498.1 2273.5	0.7079 100.5 98.0	18.2552 [18.9808]	96.2%			
8:2FTS	(527.0 / 507.0) 2363062 (527.0 / 81.0) 1718781	(7.33, 1.00) (0.00, N/A, 0.0)	3089.1 3482.6	0.7274 107.6 96.4	19.1289 [19.1658]	99.8%			

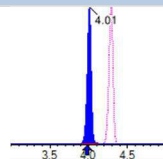
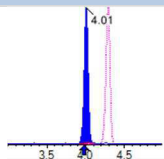
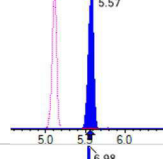
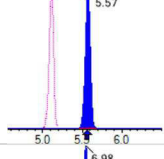
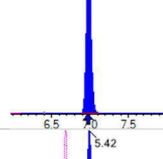
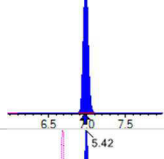
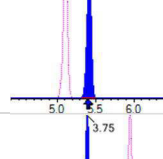
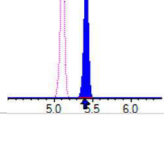
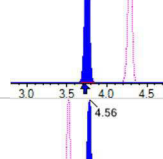
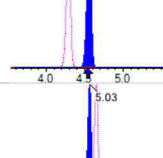
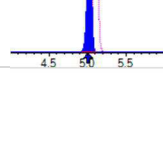
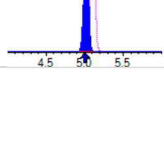
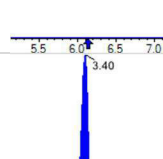
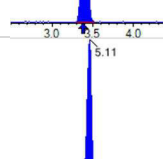
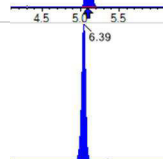


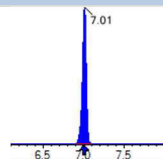
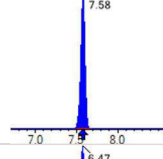
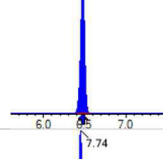
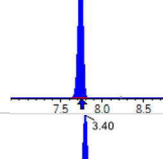
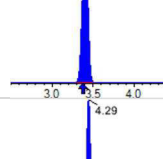
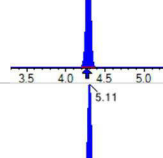
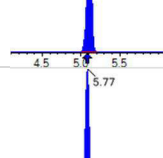
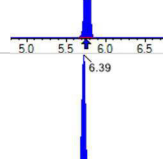
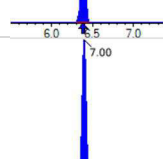
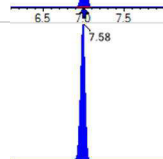
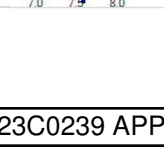
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (32)
 Acquired: 2023/04/14 - 21:09

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) 5280276 (498.0 / 478.0) 113692	(9.73, 1.00) (0.00, N/A, -0.1)	4697.0 1000.8	0.0215 87.0 97.0	5.4909 [5.0000]	109.8%			
NMeFOSA	(512.0 / 219.0) 5655805 (512.0 / 169.0) 4734558	(10.38, 1.00) (0.00, N/A, 1.3)	5683.5 6358.3	0.8371 96.5 99.2	21.3993 [20.0000]	107.0%			
NEIFOSA	(526.0 / 219.0) 6562222 (526.0 / 169.0) 8148963	(10.55, 1.00) (0.00, N/A, 1.2)	7451.4 7450.0	1.2418 99.3 99.7	20.8491 [20.0000]	104.2%			
NMeFOSAA	(570.0 / 419.0) 656652 (570.0 / 483.0) 328692	(7.72, 1.00) (0.00, N/A, -0.1)	3919.8 523.2	0.5006 108.1 94.0	5.1793 [5.0000]	103.6%			
NEIFOSAA	(584.0 / 419.0) 544529 (584.0 / 526.0) 342152	(7.97, 1.00) (0.01, N/A, -0.1)	201371.0 4463753.5	0.6283 102.9 109.6	4.9189 [5.0000]	98.4%			
NMeFOSE	(616.0 / 59.0) 2365095	(10.32, 1.00) (0.01, N/A, 0.0)	2488.5	N/A 0.0 0.0	19.8921 [20.0000]	99.5%			
NEtFOSE	(630.0 / 59.0) 3048324	(10.50, 1.00) (0.01, N/A, 0.0)	1521.7	N/A 0.0 0.0	20.4844 [20.0000]	102.4%			
HFPO-DA	(285.0 / 169.0) 1297639 (285.0 / 185.0) 3621354	(5.37, 1.00) (0.00, N/A, 0.0)	2847.0 2943.2	2.7907 107.3 107.3	10.4206 [10.0000]	104.2%			
ADONA	(377.0 / 85.0) 4808175 (377.0 / 251.0) 475051	(6.00, 1.12) (N/A, 0.01, -0.1)	6571.5 2285.5	0.0988 99.5 97.2	10.8067 [9.4270]	114.6%			
9CI-Pf3ONS	(531.0 / 351.0) 13782168 (533.0 / 353.0) 4234547	(8.15, 1.52) (N/A, 0.00, 0.0)	5205.9 4522.0	0.3072 105.8 94.3	10.2886 [9.3325]	110.2%			
11CI-PF3OUDS	(631.0 / 451.0) 7966814 (633.0 / 453.0) 2721349	(8.89, 1.66) (N/A, 0.00, -0.1)	6254.9 5652.3	0.3416 101.9 100.9	10.0616 [9.4321]	106.7%			

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) 162764 (241.0 / 117.0) 266924	(4.01, 0.93) (N/A, 0.03, 0.1)	68.6 67.4	1.6399 99.3 101.6	22.1483 [20.0000]	110.7%			
5:3FTCA	(341.0 / 236.7) 913981 (341.0 / 217.0) 1481978	(5.57, 1.09) (N/A, 0.01, 0.2)	1440.2 1609.2	1.6215 103.4 98.2	22.3127 [20.0000]	111.6%			
7:3FTCA	(441.0 / 317.0) 1493761 (441.0 / 337.0) 1356239	(6.98, 1.37) (N/A, 0.01, 0.0)	1591.5 1597.3	0.9079 105.4 107.3	20.8241 [20.0000]	104.1%			
PFEESA	(315.0 / 135.0) 2928185 (315.0 / 83.0) 707713	(5.42, 1.06) (N/A, 0.02, 0.0)	5258.0 1548.3	0.2417 99.0 99.7	8.9318 [8.9246]	100.1%			
PFMPA	(229.0 / 85.0) 463846	(3.75, 0.88) (N/A, 0.03, 0.0)	4212.9	N/A 0.0 0.0	10.8608 [10.0000]	108.6%			
PFMBA	(279.0 / 85.0) 1429656	(4.56, 1.06) (N/A, 0.02, 0.0)	4460.6	N/A 0.0 0.0	9.1424 [10.0000]	91.4%			
NFDHA	(295.0 / 201.0) 1340663 (295.0 / 85.0) 1269080	(5.03, 0.98) (N/A, 0.02, 0.1)	3320.8 3178.2	0.9466 96.6 99.1	10.0639 [10.0000]	100.6%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [5.0000]	N/A%			CV2,
13C3_PFBAA_IIS	(216.0 / 172.0) 118900	(3.40, N/A) (N/A, 0.03, N/A)	999.5	N/A	0.9753 [1.0000]	97.5% { 94.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 187037	(5.11, N/A) (N/A, 0.03, N/A)	3548.2	N/A	0.9222 [1.0000]	92.2% { 93.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 341887	(6.39, N/A) (N/A, 0.01, N/A)	1797.2	N/A	1.0758 [1.0000]	107.6% { 103.2% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 286647	(7.01, N/A) (N/A, 0.01, N/A)	3979337.3	N/A	0.9445 [1.0000]	94.4% { 89.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 307672	(7.58, N/A) (N/A, 0.00, N/A)	6266.6	N/A	0.9482 [1.0000]	94.8% { 93.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 456567	(6.47, N/A) (N/A, 0.01, N/A)	48248.0	N/A	1.0194 [1.0000]	101.9% { 93.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 571451	(7.74, N/A) (N/A, -0.01, N/A)	1482.8	N/A	0.8403 [1.0000]	84.0% { 80.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1044591	(3.40, N/A) (N/A, 0.03, N/A)	5081.1	N/A	8.2862 [8.0000]	103.6% { 96.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 834761	(4.29, N/A) (N/A, 0.02, N/A)	3881.4	N/A	3.9845 [4.0000]	99.6% { 97.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 540340	(5.11, N/A) (N/A, 0.03, N/A)	1595.9	N/A	2.0382 [2.0000]	101.9% { 92.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 495673	(5.77, N/A) (N/A, 0.01, N/A)	2423.6	N/A	2.1405 [2.0000]	107.0% { 90.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 639576	(6.39, N/A) (N/A, 0.01, N/A)	4485.8	N/A	1.8953 [2.0000]	94.8% { 96.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 258880	(7.00, N/A) (N/A, 0.01, N/A)	3025.6	N/A	0.9613 [1.0000]	96.1% { 81.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 338577	(7.58, N/A) (N/A, 0.00, N/A)	8122.6	N/A	0.9809 [1.0000]	98.1% { 96.3% }			

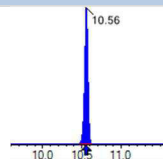
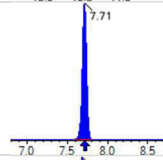
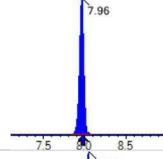
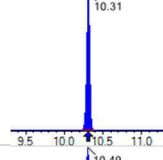
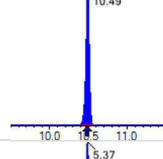
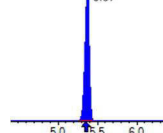


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (32)
 Acquired: 2023/04/14 - 21:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 334150	(8.10, N/A) (N/A, 0.00, N/A)	2639.1	N/A	1.0429 [1.0000]	104.3% { 91.6% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 262973	(8.56, N/A) (N/A, 0.00, N/A)	5554.1	N/A	0.9586 [1.0000]	95.9% { 99.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 233857	(9.03, N/A) (N/A, 0.00, N/A)	1010.6	N/A	0.9040 [1.0000]	90.4% { 100.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1264441	(5.06, N/A) (N/A, 0.03, N/A)	2876.4	N/A	1.7640 [2.0000]	88.2% { 95.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 822898	(6.47, N/A) (N/A, 0.01, N/A)	2315.3	N/A	1.9554 [2.0000]	97.8% { 92.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1500291	(7.74, N/A) (N/A, 0.00, N/A)	1302.6	N/A	2.1671 [2.0000]	108.4% { 90.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 244747	(4.88, N/A) (N/A, 0.02, N/A)	1138.5	N/A	3.7910 [4.0000]	94.8% { 102.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 313211	(6.15, N/A) (N/A, 0.01, N/A)	2069.5	N/A	4.2507 [4.0000]	106.3% { 108.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 350229	(7.33, N/A) (N/A, 0.00, N/A)	2903.6	N/A	3.5902 [4.0000]	89.8% { 94.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2195079	(9.73, N/A) (N/A, 0.01, N/A)	3098.5	N/A	1.9531 [2.0000]	97.7% { 89.7% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 637066	(10.38, N/A) (N/A, 0.01, N/A)	2780.4	N/A	2.6564 [2.0000]	132.8% { 101.6% }			S2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	(531.0 / 169.0) 599211	(10.56 , N/A) (N/A , 0.01 , N/A)	3272.9	N/A	3.0282 [2.0000]	151.4% { 107.0% }			S2,
D3_MeFOSAA_EIS	(573.0 / 419.0) 596627	(7.71 , N/A) (N/A , 0.00 , N/A)	1598.5	N/A	4.0208 [4.0000]	100.5% { 91.6% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 500580	(7.96 , N/A) (N/A , 0.00 , N/A)	15726.4	N/A	4.1129 [4.0000]	102.8% { 90.3% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2178056	(10.31 , N/A) (N/A , 0.01 , N/A)	2021.8	N/A	27.3556 [20.0000]	136.8% { 100.2% }			S2,
D9_NEIFOSE_EIS	(639.0 / 58.9) 3022139	(10.49 , N/A) (N/A , 0.01 , N/A)	1334.6	N/A	28.7183 [20.0000]	143.6% { 103.2% }			S2,
13C3_HFPODA_EIS	(287.0 / 169.0) 1179646	(5.37 , N/A) (N/A , 0.02 , N/A)	2406.9	N/A	7.8875 [8.0000]	98.6% { 97.3% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23C0362

Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810
 Calibration: 2315014
 Sequence: SC01502

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01502-CCV3	PFBA	20.0	21.6	108	ng/mL	+/- 30.00%
	PFPEA	10.0	10.3	103	ng/mL	+/- 30.00%
	PFHXA	5.00	5.24	105	ng/mL	+/- 30.00%
	PFHPA	5.00	5.00	100	ng/mL	+/- 30.00%
	PFOA	5.00	5.32	106	ng/mL	+/- 30.00%
	PFNA	5.00	5.17	103	ng/mL	+/- 30.00%
	PFDA	5.00	4.87	97.4	ng/mL	+/- 30.00%
	PFUnA	5.00	4.88	97.6	ng/mL	+/- 30.00%
	PFDOA	5.00	5.30	106	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.96	99.2	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.84	96.7	ng/mL	+/- 30.00%
	PFBS	4.42	4.94	112	ng/mL	+/- 30.00%
	PFPEs	4.70	4.61	98.1	ng/mL	+/- 30.00%
	PFHXS	4.58	4.23	92.3	ng/mL	+/- 30.00%
	PFHPS	4.78	5.15	108	ng/mL	+/- 30.00%
	PFOS	4.65	4.32	93.0	ng/mL	+/- 30.00%
	PFNS	4.80	4.57	95.2	ng/mL	+/- 30.00%
	PFDS	4.82	4.21	87.4	ng/mL	+/- 30.00%
	PFDOS	4.85	4.29	88.4	ng/mL	+/- 30.00%
	4:2FTS	18.8	20.4	108	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.8	99.1	ng/mL	+/- 30.00%
	8:2FTS	19.2	21.5	112	ng/mL	+/- 30.00%
	PFOSA	5.00	4.96	99.2	ng/mL	+/- 30.00%
	NMeFOSA	20.0	20.0	100	ng/mL	+/- 30.00%
	NEtFOSA	20.0	20.8	104	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.82	96.3	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.08	102	ng/mL	+/- 30.00%
	NMeFOSE	20.0	21.1	106	ng/mL	+/- 30.00%
	NEtFOSE	20.0	19.5	97.7	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.8	118	ng/mL	+/- 30.00%

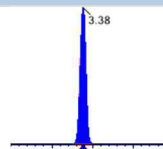
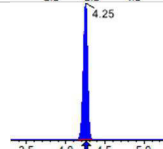
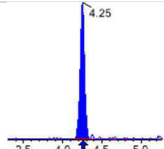
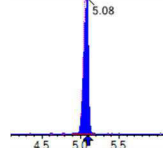
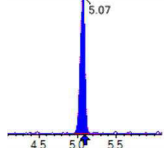
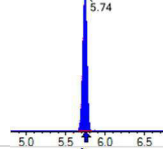
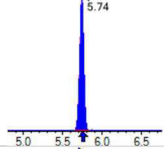
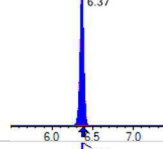
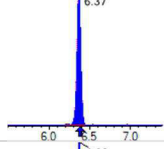
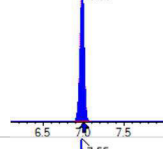
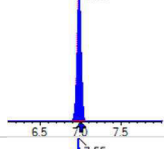
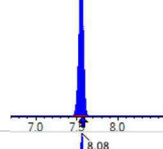
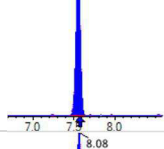
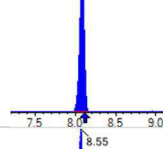
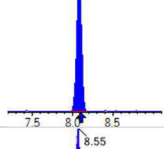
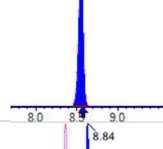
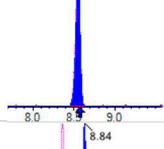
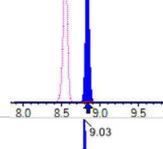
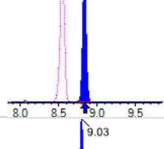
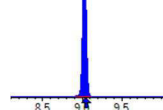
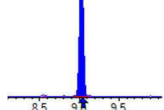
INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23C0362

Work Order: 23C0239
 Project: Red Hill AFFF Assessment Sampling / 60697810
 Calibration: 2315014
 Sequence: SC01502

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01502-CCV3	ADONA	9.45	12.7	134	ng/mL	+/- 30.00%
	PFEESA	8.90	9.63	108	ng/mL	+/- 30.00%
	PFMPA	10.0	12.0	120	ng/mL	+/- 30.00%
	PFMBA	10.0	10.4	104	ng/mL	+/- 30.00%
	NFDHA	10.0	9.40	94.0	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	11.4	122	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	11.8	125	ng/mL	+/- 30.00%
	3:3FTCA	20.0	23.0	115	ng/mL	+/- 30.00%
	5:3FTCA	20.0	22.8	114	ng/mL	+/- 30.00%
	7:3FTCA	20.0	21.9	110	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	(213.0 / 169.0) 2447159	(3.38, 1.00) (0.00, N/A, 0.0)	211.5	N/A 0.0 0.0	21.6316 [20.0000]	108.2%			
PFPeA	(263.0 / 219.0) 2192680 (263.0 / 69.0) 21377	(4.25, 1.00) (0.00, N/A, 0.1)	3072.3 348.4	0.0097 74.3 83.3	10.3372 [10.0000]	103.4%			
PFHxA	(313.0 / 269.0) 1582120 (313.0 / 119.0) 131183	(5.08, 1.00) (0.01, N/A, 0.5)	973.0 712.9	0.0829 76.0 85.2	5.2367 [5.0000]	104.7%			
PFHpA	(363.0 / 319.0) 1320869 (363.0 / 169.0) 404287	(5.74, 1.00) (0.00, N/A, 0.1)	2982.6 2221.5	0.3061 100.3 98.3	4.9981 [5.0000]	100.0%			
PFOA	(413.0 / 369.0) 1750723 (413.0 / 169.0) 566961	(6.37, 1.00) (0.00, N/A, 0.0)	1884.1 3246.8	0.3238 103.4 103.4	5.3219 [5.0000]	106.4%			
PFNA	(463.0 / 419.0) 1595019 (463.0 / 169.0) 335945	(6.98, 1.00) (0.00, N/A, 0.0)	6542.3 9006207.8	0.2106 98.6 102.1	5.1668 [5.0000]	103.3%			
PFDA	(513.0 / 469.0) 1992161 (513.0 / 169.0) 230881	(7.55, 1.00) (0.00, N/A, 0.0)	3110.6 747.5	0.1159 101.1 103.9	4.8724 [5.0000]	97.4%			
PFUnA	(563.0 / 519.0) 1754107 (563.0 / 169.0) 203537	(8.08, 1.00) (0.00, N/A, 0.2)	2970.6 1170.4	0.1160 98.2 101.9	4.8790 [5.0000]	97.6%			
PFDoA	(613.0 / 569.0) 1732846 (613.0 / 169.0) 286648	(8.55, 1.00) (0.00, N/A, 0.0)	3351.8 955.4	0.1654 96.5 111.9	5.2960 [5.0000]	105.9%			
PFTrDA	(663.0 / 619.0) 1478650 (663.0 / 169.0) 372944	(8.84, 1.03) (N/A, -0.01, 0.0)	3774.2 1868.2	0.2522 101.8 97.0	4.9600 [5.0000]	99.2%			
PFTeDA	(713.0 / 669.0) 1532485 (713.0 / 169.0) 308477	(9.03, 1.00) (0.00, N/A, 0.0)	2192.2 933.0	0.2013 99.9 101.2	4.8370 [5.0000]	96.7%			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (52)
 Acquired: 2023/04/15 - 01:26

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	(299.0 / 80.0) 2163947 (299.0 / 99.0) 1368431	(5.01, 1.00) (0.00, N/A, 0.0)	7510.6 4856.7	0.6324 98.4 95.4	4.9434 [4.4237]	111.7%			
PFPeS	(349.0 / 80.0) 4248652 (349.0 / 99.0) 1516259	(5.76, 0.89) (N/A, -0.01, 0.1)	54500.5 14215.6	0.3569 105.3 102.7	4.6095 [4.6919]	98.2%			
PFHxS	(399.0 / 80.0) 3319375 (399.0 / 99.0) 1182728	(6.45, 1.00) (0.00, N/A, 0.0)	28928.2 2406.6	0.3563 102.9 103.4	4.2264 [4.5549]	92.8%			
PFHpS	(449.0 / 80.0) 4093769 (449.0 / 99.0) 1141578	(7.11, 0.92) (N/A, -0.02, 0.1)	59184.5 30782.5	0.2789 100.5 100.7	5.1491 [4.7570]	108.2%			
PFOS	(499.0 / 80.0) 4824988 (499.0 / 99.0) 1130074	(7.72, 1.00) (0.00, N/A, 0.0)	1913.2 3627.6	0.2342 104.7 101.7	4.3243 [4.6375]	93.2%			
PFNS	(549.0 / 80.0) 4766249 (549.0 / 99.0) 1167872	(8.27, 1.07) (N/A, -0.02, 0.0)	38777.3 7964.9	0.2450 101.2 100.9	4.5711 [4.7994]	95.2%			
PFDS	(599.0 / 80.0) 4967157 (599.0 / 99.0) 1169668	(8.69, 1.13) (N/A, -0.01, 0.0)	4327.3 3629.7	0.2355 105.1 105.2	4.2140 [4.8155]	87.5%			
PFDoS	(699.0 / 80.0) 3885759 (699.0 / 99.0) 849454	(9.10, 1.18) (N/A, 0.00, -0.1)	4059.6 2597.0	0.2186 91.3 101.4	4.2854 [4.8478]	88.4%			
4:2FTS	(327.0 / 307.0) 5008225 (327.0 / 81.0) 2823632	(4.84, 1.00) (0.00, N/A, 0.1)	5451.4 2168.7	0.5638 82.9 91.4	20.3726 [18.6906]	109.0%			
6:2FTS	(427.0 / 407.0) 3467150 (427.0 / 81.0) 2484832	(6.13, 1.00) (0.00, N/A, 0.1)	3198.1 2474.4	0.7167 101.8 99.2	18.8232 [18.9808]	99.2%			
8:2FTS	(527.0 / 507.0) 3634298 (527.0 / 81.0) 2970483	(7.31, 1.00) (0.00, N/A, 0.0)	4241.6 3117.4	0.8173 121.0 108.4	21.5274 [19.1658]	112.3%			

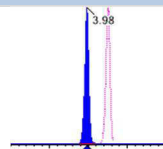
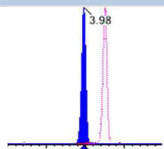
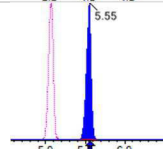
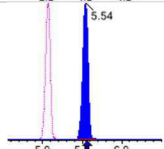
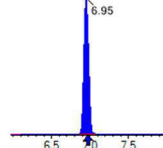
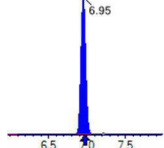
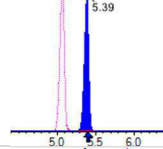
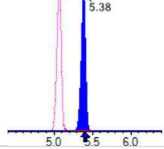
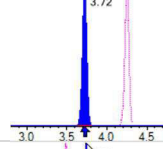
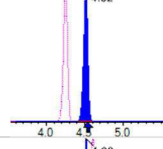
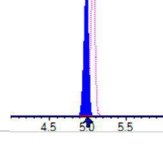
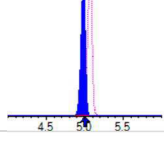
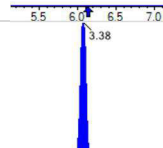
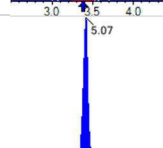
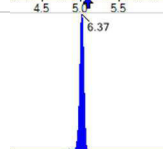


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (52)
 Acquired: 2023/04/15 - 01:26

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) 5417765 (498.0 / 478.0) 127849	(9.71, 1.00) (0.00, N/A, 0.0)	5389.7 720.3	0.0236 95.3 106.3	4.9605 [5.0000]	99.2%			
NMeFOSA	(512.0 / 219.0) 2528712 (512.0 / 169.0) 2185088	(10.36, 1.00) (0.00, N/A, 0.9)	3487.8 3498.5	0.8641 99.6 102.4	20.0324 [20.0000]	100.2%			
NEIFOSA	(526.0 / 219.0) 3873824 (526.0 / 169.0) 4878654	(10.54, 1.00) (0.00, N/A, 1.4)	4401.4 4970.5	1.2594 100.7 101.1	20.8132 [20.0000]	104.1%			
NMeFOSAA	(570.0 / 419.0) 977281 (570.0 / 483.0) 460336	(7.69, 1.00) (0.00, N/A, -0.1)	2516.3 577.5	0.4710 101.7 88.4	4.8165 [5.0000]	96.3%			
NEIFOSAA	(584.0 / 419.0) 922932 (584.0 / 526.0) 516133	(7.95, 1.00) (0.01, N/A, -0.1)	538896.4 1450.3	0.5592 91.6 97.6	5.0826 [5.0000]	101.7%			
NMeFOSE	(616.0 / 59.0) 681458	(10.31, 1.00) (0.01, N/A, 0.0)	489.9	N/A 0.0 0.0	21.1210 [20.0000]	105.6%			
NEtFOSE	(630.0 / 59.0) 1488202	(10.49, 1.00) (0.01, N/A, 0.0)	721.6	N/A 0.0 0.0	19.5401 [20.0000]	97.7%			
HFPO-DA	(285.0 / 169.0) 1456595 (285.0 / 185.0) 3901443	(5.33, 1.00) (0.00, N/A, 0.0)	2889.6 3784.9	2.6785 103.0 102.9	11.7664 [10.0000]	117.7%			
ADONA	(377.0 / 85.0) 5600757 (377.0 / 251.0) 525610	(5.97, 1.12) (N/A, -0.01, 0.0)	5108.7 1572.6	0.0938 94.5 92.4	12.6627 [9.4270]	134.3%			CV2.
9CI-Pf3ONS	(531.0 / 351.0) 15194003 (533.0 / 353.0) 4637708	(8.13, 1.53) (N/A, -0.02, 0.0)	4763.7 3124.6	0.3052 105.1 93.7	11.4098 [9.3325]	122.3%			
11CI-PF3OUDS	(631.0 / 451.0) 9292069 (633.0 / 453.0) 3350074	(8.88, 1.67) (N/A, -0.01, -0.1)	8443.8 4718.4	0.3605 107.6 106.5	11.8048 [9.4321]	125.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 179145 (241.0 / 117.0) 267739	(3.98, 0.94) (N/A, 0.00, 0.1)	54.7 59.0	1.4945 90.5 92.6	23.0485 [20.0000]	115.2%			
5:3FTCA	(341.0 / 236.7) 1084197 (341.0 / 217.0) 1687999	(5.55, 1.09) (N/A, -0.01, 0.3)	1423.3 1701.7	1.5569 99.3 94.3	22.8323 [20.0000]	114.2%			
7:3FTCA	(441.0 / 317.0) 1821518 (441.0 / 337.0) 1526941	(6.95, 1.37) (N/A, -0.02, 0.0)	1656.7 1974.8	0.8383 97.3 99.1	21.9051 [20.0000]	109.5%			
PFEESA	(315.0 / 135.0) 3658244 (315.0 / 83.0) 798107	(5.39, 1.06) (N/A, -0.01, 0.1)	5272.6 1247.6	0.2182 89.4 90.0	9.6258 [8.9246]	107.9%			
PFMPA	(229.0 / 85.0) 540352	(3.72, 0.88) (N/A, 0.00, 0.0)	4928.8	N/A 0.0 0.0	11.9624 [10.0000]	119.6%			
PFMBA	(279.0 / 85.0) 1714813	(4.52, 1.06) (N/A, -0.02, 0.0)	5316.8	N/A 0.0 0.0	10.3681 [10.0000]	103.7%			
NFDHA	(295.0 / 201.0) 1451418 (295.0 / 85.0) 1360781	(4.98, 0.98) (N/A, -0.02, 0.1)	2488.9 2628.3	0.9376 95.7 98.1	9.3987 [10.0000]	94.0%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [5.0000]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 109245	(3.38, N/A) (N/A, 0.01, N/A)	859.5	N/A	0.8961 [1.0000]	89.6% { 86.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 96909	(5.07, N/A) (N/A, -0.02, N/A)	1812.7	N/A	0.4778 [1.0000]	47.8% { 48.5% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 326892	(6.37, N/A) (N/A, -0.02, N/A)	2495.6	N/A	1.0286 [1.0000]	102.9% { 98.7% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (52)
 Acquired: 2023/04/15 - 01:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 311328	(6.98, N/A) (N/A, -0.02, N/A)	1497.3	N/A	1.0258 [1.0000]	102.6% { 97.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 341162	(7.55, N/A) (N/A, -0.02, N/A)	3196.4	N/A	1.0514 [1.0000]	105.1% { 103.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 507129	(6.45, N/A) (N/A, -0.02, N/A)	2930.3	N/A	1.1323 [1.0000]	113.2% { 103.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 793213	(7.72, N/A) (N/A, -0.03, N/A)	1970.8	N/A	1.1664 [1.0000]	116.6% { 111.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1035712	(3.38, N/A) (N/A, 0.01, N/A)	4302.0	N/A	8.9419 [8.0000]	111.8% { 95.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 882890	(4.25, N/A) (N/A, -0.01, N/A)	2833.8	N/A	8.1335 [4.0000]	203.3% { 102.7% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 626385	(5.07, N/A) (N/A, -0.02, N/A)	1836.2	N/A	4.5601 [2.0000]	228.0% { 106.8% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 613174	(5.74, N/A) (N/A, -0.02, N/A)	1882.4	N/A	5.1107 [2.0000]	255.5% { 112.4% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 697791	(6.37, N/A) (N/A, -0.01, N/A)	2197.3	N/A	2.1627 [2.0000]	108.1% { 105.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 334682	(6.98, N/A) (N/A, -0.02, N/A)	1262.8	N/A	1.1442 [1.0000]	114.4% { 104.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 434996	(7.56, N/A) (N/A, -0.02, N/A)	2814.1	N/A	1.1366 [1.0000]	113.7% { 123.8% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (52)
 Acquired: 2023/04/15 - 01:26

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
13C7_PFUa_EIS	(570.0 / 525.0) 408610	(8.08, N/A) (N/A, -0.02, N/A)	4221.9	N/A	1.1501 [1.0000]	115.0% { 112.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 360759	(8.55, N/A) (N/A, -0.02, N/A)	1760.4	N/A	1.1859 [1.0000]	118.6% { 136.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 345691	(9.03, N/A) (N/A, 0.00, N/A)	1174.7	N/A	1.2051 [1.0000]	120.5% { 148.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1227409	(5.01, N/A) (N/A, -0.02, N/A)	2243.0	N/A	1.5416 [2.0000]	77.1% { 92.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 999088	(6.45, N/A) (N/A, -0.02, N/A)	2739.2	N/A	2.1373 [2.0000]	106.9% { 112.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1971941	(7.72, N/A) (N/A, -0.03, N/A)	1538.3	N/A	2.0520 [2.0000]	102.6% { 118.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 331143	(4.84, N/A) (N/A, -0.02, N/A)	1455.9	N/A	4.6178 [4.0000]	115.4% { 138.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 430539	(6.13, N/A) (N/A, -0.01, N/A)	1504.0	N/A	5.2604 [4.0000]	131.5% { 149.0% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 478625	(7.31, N/A) (N/A, -0.02, N/A)	2303.4	N/A	4.4172 [4.0000]	110.4% { 128.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2493067	(9.72, N/A) (N/A, 0.00, N/A)	3693.5	N/A	1.5981 [2.0000]	79.9% { 101.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 304267	(10.36, N/A) (N/A, -0.01, N/A)	1237.6	N/A	0.9140 [2.0000]	45.7% { 48.5% }			S1,



Chemist: HGH
Instrument: Saphira

Sample I.D.: SC01502-CCV3

DF, IV: 1, 10.0µL

Quant Method: 1633 - S2023-04-12A

Path: S2023-04-14A (52)

Type: Sciex Q3 5500

Acquisition Method: 1633 2023-03-28.dam

Acquired: 2023/04/15 - 01:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 354337	(10.54 , N/A) (N/A , -0.01 , N/A)	1451.5	N/A	1.2901 [2.0000]	64.5% { 63.3% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 954847	(7.69 , N/A) (N/A , -0.03 , N/A)	2876.1	N/A	4.6359 [4.0000]	115.9% { 146.5% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 821103	(7.94 , N/A) (N/A , -0.03 , N/A)	5104.8	N/A	4.8603 [4.0000]	121.5% { 148.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 591053	(10.30 , N/A) (N/A , -0.01 , N/A)	357.1	N/A	5.3480 [20.0000]	26.7% { 27.2% }			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 1546718	(10.47 , N/A) (N/A , -0.01 , N/A)	664.0	N/A	10.5888 [20.0000]	52.9% { 52.8% }			S1,
13C3_HFPODA_EIS	(287.0 / 169.0) 1172696	(5.33 , N/A) (N/A , -0.02 , N/A)	2296.4	N/A	15.1334 [8.0000]	189.2% { 96.7% }			S2,

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ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01442
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01442-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	0.00	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	0.0159	ng/mL	0.10	U
	NEtFOSAA	0.0160	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: SC01442
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01442-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	8.08	ng/mL		
	13C5-PFPEA	4.33	ng/mL		
	13C5-PFHXA	2.22	ng/mL		
	13C4-PFHPA	2.17	ng/mL		
	13C8-PFOA	2.09	ng/mL		
	13C9-PFNA	1.01	ng/mL		
	13C6-PFDA	0.986	ng/mL		
	13C7-PFUnA	1.01	ng/mL		
	13C2-PFDOA	0.989	ng/mL		
	13C2-PFTEDA	1.01	ng/mL		
	13C3-PFBS	2.07	ng/mL		
	13C3-PFHXS	2.08	ng/mL		
	13C8-PFOS	1.91	ng/mL		
	13C2-4:2FTS	4.35	ng/mL		
	13C2-6:2FTS	4.23	ng/mL		
	13C2-8:2FTS	3.77	ng/mL		
	13C8-PFOSA	2.05	ng/mL		
	D3-NMEFOSA	1.93	ng/mL		
	D5-NETFOSA	2.07	ng/mL		
	D3-NMEFOSAA	3.66	ng/mL		
	D5-NETFOSAA	3.88	ng/mL		
	D7-NMEFOSE	20.9	ng/mL		
	D9-NETFOSSE	20.2	ng/mL		
	13C3-HFPO-DA	9.42	ng/mL		



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (9)
 Acquired: 2023/04/12 - 11:55

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

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) 2313 (570.0 / 483.0) 890	(7.74, 1.00) (0.01, N/A, 0.1)	144070.0 349.0	0.3846 83.0 83.0	0.0159	N/A			
NEtFOSAA	(584.0 / 419.0) 2106 (584.0 / 526.0) 1334	(7.98, 1.00) (0.01, N/A, 0.0)	198812.7 787.7	0.6336 103.8 103.8	0.0160	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (9)
 Acquired: 2023/04/12 - 11:55

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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 131235	(3.43, N/A) (N/A, -0.03, N/A)	1628.2	N/A	1.0765 [1.0000]	107.7% { 109.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 185679	(5.17, N/A) (N/A, 0.00, N/A)	5681.7	N/A	0.9155 [1.0000]	91.5% { 94.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 304308	(6.40, N/A) (N/A, 0.00, N/A)	4393.1	N/A	0.9576 [1.0000]	95.8% { 94.4% }			

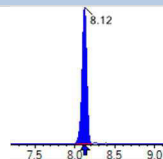
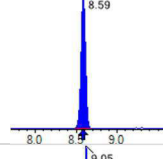
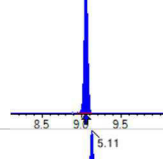
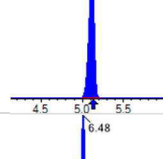
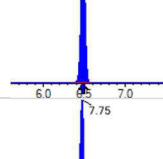
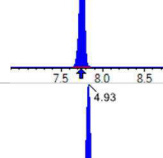
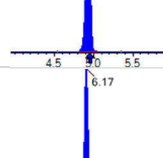
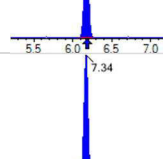
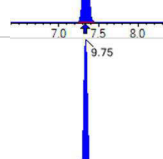
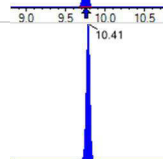
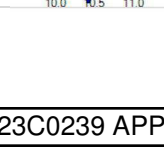


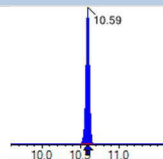
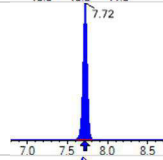
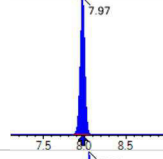
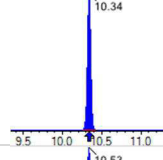
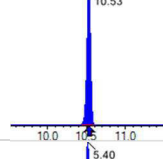
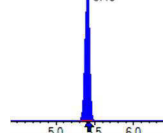
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01442-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-12A (9)
 Acquired: 2023/04/12 - 11:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 308904	(7.01, N/A) (N/A, 0.00, N/A)	3567.6	N/A	1.0178 [1.0000]	101.8% { 100.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 327675	(7.59, N/A) (N/A, 0.01, N/A)	5568.3	N/A	1.0099 [1.0000]	101.0% { 107.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 436121	(6.49, N/A) (N/A, 0.00, N/A)	6535.2	N/A	0.9738 [1.0000]	97.4% { 105.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 722040	(7.75, N/A) (N/A, 0.01, N/A)	2474.0	N/A	1.0617 [1.0000]	106.2% { 111.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1124775	(3.43, N/A) (N/A, -0.03, N/A)	4934.8	N/A	8.0837 [8.0000]	101.0% { 107.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 900156	(4.31, N/A) (N/A, -0.02, N/A)	3084.4	N/A	4.3281 [4.0000]	108.2% { 100.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 584169	(5.17, N/A) (N/A, -0.01, N/A)	1994.3	N/A	2.2196 [2.0000]	111.0% { 99.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 498435	(5.80, N/A) (N/A, -0.01, N/A)	5963.9	N/A	2.1682 [2.0000]	108.4% { 101.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 626445	(6.40, N/A) (N/A, 0.00, N/A)	12440.6	N/A	2.0857 [2.0000]	104.3% { 102.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 293038	(7.02, N/A) (N/A, 0.00, N/A)	331.5	N/A	1.0097 [1.0000]	101.0% { 97.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 362434	(7.58, N/A) (N/A, 0.00, N/A)	2783444.1	N/A	0.9859 [1.0000]	98.6% { 100.7% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 346095	(8.12, N/A) (N/A, 0.01, N/A)	3509.0	N/A	1.0142 [1.0000]	101.4% { 95.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 288939	(8.59, N/A) (N/A, 0.00, N/A)	1242.0	N/A	0.9889 [1.0000]	98.9% { 100.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 278849	(9.05, N/A) (N/A, 0.00, N/A)	1703.7	N/A	1.0121 [1.0000]	101.2% { 92.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1415839	(5.11, N/A) (N/A, -0.01, N/A)	2202.9	N/A	2.0678 [2.0000]	103.4% { 101.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 834657	(6.48, N/A) (N/A, 0.00, N/A)	2982.0	N/A	2.0763 [2.0000]	103.8% { 103.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1668953	(7.75, N/A) (N/A, 0.01, N/A)	3037.3	N/A	1.9079 [2.0000]	95.4% { 100.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 268025	(4.93, N/A) (N/A, -0.01, N/A)	1129.5	N/A	4.3462 [4.0000]	108.7% { 107.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 297714	(6.17, N/A) (N/A, 0.00, N/A)	1565.5	N/A	4.2298 [4.0000]	105.7% { 101.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 351386	(7.34, N/A) (N/A, 0.01, N/A)	1633.2	N/A	3.7710 [4.0000]	94.3% { 97.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2910258	(9.75, N/A) (N/A, 0.00, N/A)	3517.8	N/A	2.0494 [2.0000]	102.5% { 112.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 584406	(10.41, N/A) (N/A, 0.00, N/A)	2601.8	N/A	1.9286 [2.0000]	96.4% { 112.4% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 516706	(10.59, N/A) (N/A, 0.00, N/A)	2770.3	N/A	2.0667 [2.0000]	103.3% { 112.3% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 685329	(7.72, N/A) (N/A, 0.01, N/A)	2916.8	N/A	3.6554 [4.0000]	91.4% { 101.9% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 597006	(7.97, N/A) (N/A, 0.01, N/A)	105443.5	N/A	3.8822 [4.0000]	97.1% { 111.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2103430	(10.34, N/A) (N/A, 0.00, N/A)	1611.6	N/A	20.9085 [20.0000]	104.5% { 110.1% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2683494	(10.53, N/A) (N/A, 0.00, N/A)	1830.2	N/A	20.1820 [20.0000]	100.9% { 106.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1398112	(5.40, N/A) (N/A, -0.01, N/A)	2742.0	N/A	9.4167 [8.0000]	117.7% { 108.3% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-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: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-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	8.03	ng/mL		
	13C5-PFPEA	3.92	ng/mL		
	13C5-PFHXA	2.00	ng/mL		
	13C4-PFHPA	2.29	ng/mL		
	13C8-PFOA	2.03	ng/mL		
	13C9-PFNA	1.09	ng/mL		
	13C6-PFDA	1.05	ng/mL		
	13C7-PFUnA	1.12	ng/mL		
	13C2-PFDOA	0.999	ng/mL		
	13C2-PFTEDA	0.916	ng/mL		
	13C3-PFBS	1.60	ng/mL		
	13C3-PFHXS	2.00	ng/mL		
	13C8-PFOS	1.95	ng/mL		
	13C2-4:2FTS	3.46	ng/mL		
	13C2-6:2FTS	4.33	ng/mL		
	13C2-8:2FTS	3.11	ng/mL		
	13C8-PFOSA	1.81	ng/mL		
	D3-NMEFOSA	2.01	ng/mL		
	D5-NETFOSA	2.18	ng/mL		
	D3-NMEFOSAA	3.30	ng/mL		
	D5-NETFOSAA	3.44	ng/mL		
	D7-NMEFOSE	21.6	ng/mL		
	D9-NETFOSSE	22.2	ng/mL		
	13C3-HFPO-DA	7.64	ng/mL		



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (1)
 Acquired: 2023/04/14 - 14:29

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (1)
 Acquired: 2023/04/14 - 14:29

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

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 150736	(3.39, N/A) (N/A, 0.02, N/A)	1008.2	N/A	1.2365 [1.0000]	123.6% {119.5%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 217609	(5.10, N/A) (N/A, 0.01, N/A)	31582.0	N/A	1.0729 [1.0000]	107.3% {109.0%}			
13C4_PFOA_IIS	(417.0 / 372.0) 348240	(6.38, N/A) (N/A, -0.01, N/A)	2088.5	N/A	1.0958 [1.0000]	109.6% {105.1%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (1)
 Acquired: 2023/04/14 - 14:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 333671	(6.99, N/A) (N/A, 0.00, N/A)	10645.0	N/A	1.0994 [1.0000]	109.9% {104.0%}			
13C2_PFDA_IIS	(515.0 / 470.1) 334406	(7.57, N/A) (N/A, -0.01, N/A)	356694.2	N/A	1.0306 [1.0000]	103.1% {101.8%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 551942	(6.46, N/A) (N/A, -0.01, N/A)	3507.3	N/A	1.2324 [1.0000]	123.2% {113.1%}			
13C4_PFOS_IIS	(503.0 / 79.9) 794243	(7.74, N/A) (N/A, -0.01, N/A)	2274.2	N/A	1.1679 [1.0000]	116.8% {111.9%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1283801	(3.39, N/A) (N/A, 0.02, N/A)	5810.4	N/A	8.0329 [8.0000]	100.4% {118.1%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 954487	(4.28, N/A) (N/A, 0.01, N/A)	2891.0	N/A	3.9159 [4.0000]	97.9% {111.0%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 616508	(5.10, N/A) (N/A, 0.01, N/A)	1802.0	N/A	1.9988 [2.0000]	99.9% {105.1%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 616383	(5.76, N/A) (N/A, 0.00, N/A)	2252.3	N/A	2.2879 [2.0000]	114.4% {113.0%}			
13C8_PFOA_EIS	(421.0 / 376.0) 698970	(6.38, N/A) (N/A, 0.00, N/A)	5108.6	N/A	2.0336 [2.0000]	101.7% {105.9%}			
13C9_PFNA_EIS	(472.0 / 427.0) 341321	(6.99, N/A) (N/A, 0.00, N/A)	3230.4	N/A	1.0888 [1.0000]	108.9% {106.9%}			
13C6_PFDA_EIS	(519.0 / 474.0) 393787	(7.57, N/A) (N/A, 0.00, N/A)	5932040.0	N/A	1.0497 [1.0000]	105.0% {112.0%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (1)
 Acquired: 2023/04/14 - 14:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 390486	(8.10, N/A) (N/A, 0.00, N/A)	2537.5	N/A	1.1213 [1.0000]	112.1% {107.1%}			
13C2_PFDa_EIS	(615.0 / 570.0) 298009	(8.57, N/A) (N/A, 0.00, N/A)	1778.9	N/A	0.9994 [1.0000]	99.9% {113.1%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 257429	(9.03, N/A) (N/A, 0.00, N/A)	1120.5	N/A	0.9156 [1.0000]	91.6% {110.5%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1382929	(5.04, N/A) (N/A, 0.01, N/A)	2634.2	N/A	1.5959 [2.0000]	79.8% {104.7%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 1019002	(6.46, N/A) (N/A, -0.01, N/A)	2911.0	N/A	2.0029 [2.0000]	100.1% {114.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1873365	(7.74, N/A) (N/A, 0.00, N/A)	3650.9	N/A	1.9469 [2.0000]	97.3% {112.8%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 270419	(4.87, N/A) (N/A, 0.01, N/A)	914.7	N/A	3.4648 [4.0000]	86.6% {113.1%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 385988	(6.14, N/A) (N/A, 0.00, N/A)	2211.4	N/A	4.3332 [4.0000]	108.3% {133.6%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 367052	(7.33, N/A) (N/A, 0.00, N/A)	2222.7	N/A	3.1125 [4.0000]	77.8% {98.7%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 2825875	(9.72, N/A) (N/A, 0.00, N/A)	3408.4	N/A	1.8091 [2.0000]	90.5% {115.4%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 668840	(10.37, N/A) (N/A, 0.00, N/A)	2467.3	N/A	2.0066 [2.0000]	100.3% {106.7%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (1)
 Acquired: 2023/04/14 - 14:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 599643	(10.55, N/A) (N/A, 0.00, N/A)	2786.6	N/A	2.1804 [2.0000]	109.0% {107.1%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 680360	(7.71, N/A) (N/A, -0.01, N/A)	1997.6	N/A	3.2990 [4.0000]	82.5% {104.4%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 581148	(7.96, N/A) (N/A, 0.00, N/A)	5859.4	N/A	3.4355 [4.0000]	85.9% {104.8%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2391623	(10.31, N/A) (N/A, 0.00, N/A)	2116.8	N/A	21.6120 [20.0000]	108.1% {110.0%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3241999	(10.48, N/A) (N/A, 0.00, N/A)	1962.4	N/A	22.1658 [20.0000]	110.8% {110.7%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1329566	(5.36, N/A) (N/A, 0.01, N/A)	2824.9	N/A	7.6410 [8.0000]	95.5% {109.6%}			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01502
 Calibration: 2315014

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

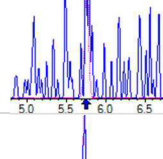
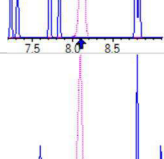
Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-CCB2	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	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: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-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	7.84	ng/mL		
	13C5-PFPEA	4.10	ng/mL		
	13C5-PFHXA	2.14	ng/mL		
	13C4-PFHPA	2.44	ng/mL		
	13C8-PFOA	1.96	ng/mL		
	13C9-PFNA	0.998	ng/mL		
	13C6-PFDA	0.960	ng/mL		
	13C7-PFUnA	1.21	ng/mL		
	13C2-PFDOA	1.11	ng/mL		
	13C2-PFTEDA	0.931	ng/mL		
	13C3-PFBS	1.74	ng/mL		
	13C3-PFHXS	2.11	ng/mL		
	13C8-PFOS	1.91	ng/mL		
	13C2-4:2FTS	3.68	ng/mL		
	13C2-6:2FTS	4.08	ng/mL		
	13C2-8:2FTS	3.85	ng/mL		
	13C8-PFOSA	1.79	ng/mL		
	D3-NMEFOSA	1.99	ng/mL		
	D5-NETFOSA	2.29	ng/mL		
	D3-NMEFOSAA	3.41	ng/mL		
	D5-NETFOSAA	3.60	ng/mL		
	D7-NMEFOSE	21.8	ng/mL		
	D9-NETFOSSE	22.2	ng/mL		
	13C3-HFPO-DA	8.57	ng/mL		

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (6)
 Acquired: 2023/04/14 - 15:34

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	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 151135	(3.37, N/A) (N/A, 0.00, N/A)	1255.3	N/A	1.2397 [1.0000]	124.0% { 119.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 208618	(5.10, N/A) (N/A, 0.01, N/A)	24385.4	N/A	1.0286 [1.0000]	102.9% { 104.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 375197	(6.40, N/A) (N/A, 0.01, N/A)	7115.7	N/A	1.1806 [1.0000]	118.1% { 113.3% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (6)
 Acquired: 2023/04/14 - 15:34

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
13C5_PFNA_IIS	(468.0 / 423.0) 376337	(7.01, N/A) (N/A, 0.02, N/A)	7110.1	N/A	1.2400 [1.0000]	124.0% { 117.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 341388	(7.59, N/A) (N/A, 0.01, N/A)	188011.5	N/A	1.0521 [1.0000]	105.2% { 103.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 521402	(6.48, N/A) (N/A, 0.01, N/A)	14705.6	N/A	1.1642 [1.0000]	116.4% { 106.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 808657	(7.75, N/A) (N/A, 0.01, N/A)	1940.8	N/A	1.1891 [1.0000]	118.9% { 114.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1255685	(3.37, N/A) (N/A, 0.00, N/A)	5259.7	N/A	7.8362 [8.0000]	98.0% { 115.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 958230	(4.27, N/A) (N/A, 0.01, N/A)	3097.1	N/A	4.1007 [4.0000]	102.5% { 111.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 633157	(5.09, N/A) (N/A, 0.01, N/A)	3179.3	N/A	2.1412 [2.0000]	107.1% { 107.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 630768	(5.76, N/A) (N/A, 0.01, N/A)	2667.2	N/A	2.4422 [2.0000]	122.1% { 115.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 725020	(6.39, N/A) (N/A, 0.01, N/A)	5071.5	N/A	1.9578 [2.0000]	97.9% { 109.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 352842	(7.01, N/A) (N/A, 0.02, N/A)	2995.1	N/A	0.9979 [1.0000]	99.8% { 110.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 367510	(7.58, N/A) (N/A, 0.01, N/A)	208533.1	N/A	0.9596 [1.0000]	96.0% { 104.6% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (6)
 Acquired: 2023/04/14 - 15:34

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
13C7_PFUa_EIS	(570.0 / 525.0) 428693	(8.12, N/A) (N/A, 0.02, N/A)	3008.9	N/A	1.2058 [1.0000]	120.6% { 117.6% }			
13C2_PFDa_EIS	(615.0 / 570.0) 338129	(8.58, N/A) (N/A, 0.02, N/A)	2026.8	N/A	1.1108 [1.0000]	111.1% { 128.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 267329	(9.04, N/A) (N/A, 0.01, N/A)	1203.2	N/A	0.9313 [1.0000]	93.1% { 114.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1424615	(5.04, N/A) (N/A, 0.01, N/A)	3215.8	N/A	1.7403 [2.0000]	87.0% { 107.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1011696	(6.48, N/A) (N/A, 0.01, N/A)	2731.7	N/A	2.1050 [2.0000]	105.3% { 113.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1866713	(7.76, N/A) (N/A, 0.01, N/A)	2647.3	N/A	1.9054 [2.0000]	95.3% { 112.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 271149	(4.87, N/A) (N/A, 0.01, N/A)	1237.0	N/A	3.6777 [4.0000]	91.9% { 113.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 343302	(6.16, N/A) (N/A, 0.01, N/A)	1892.0	N/A	4.0797 [4.0000]	102.0% { 118.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 428558	(7.34, N/A) (N/A, 0.01, N/A)	2122.6	N/A	3.8469 [4.0000]	96.2% { 115.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2844073	(9.73, N/A) (N/A, 0.01, N/A)	3539.7	N/A	1.7883 [2.0000]	89.4% { 116.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 675174	(10.37, N/A) (N/A, 0.00, N/A)	2407.6	N/A	1.9894 [2.0000]	99.5% { 107.7% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (6)
 Acquired: 2023/04/14 - 15:34

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 641100	(10.55 , N/A) (N/A , 0.00 , N/A)	2483.5	N/A	2.2895 [2.0000]	114.5% { 114.5% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 717049	(7.73 , N/A) (N/A , 0.01 , N/A)	1794.6	N/A	3.4149 [4.0000]	85.4% { 110.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 620030	(7.98 , N/A) (N/A , 0.01 , N/A)	13756.0	N/A	3.6000 [4.0000]	90.0% { 111.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2459881	(10.30 , N/A) (N/A , 0.00 , N/A)	1723.2	N/A	21.8326 [20.0000]	109.2% { 113.2% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3298830	(10.48 , N/A) (N/A , 0.00 , N/A)	1536.3	N/A	22.1523 [20.0000]	110.8% { 112.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1429392	(5.35 , N/A) (N/A , 0.00 , N/A)	2515.7	N/A	8.5688 [8.0000]	107.1% { 117.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-CCB3	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-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	8.11	ng/mL		
	13C5-PFPEA	3.51	ng/mL		
	13C5-PFHXA	1.95	ng/mL		
	13C4-PFHPA	2.06	ng/mL		
	13C8-PFOA	1.88	ng/mL		
	13C9-PFNA	1.12	ng/mL		
	13C6-PFDA	0.975	ng/mL		
	13C7-PFUnA	1.13	ng/mL		
	13C2-PFDOA	1.07	ng/mL		
	13C2-PFTEDA	0.903	ng/mL		
	13C3-PFBS	1.75	ng/mL		
	13C3-PFHXS	1.84	ng/mL		
	13C8-PFOS	1.96	ng/mL		
	13C2-4:2FTS	3.91	ng/mL		
	13C2-6:2FTS	4.07	ng/mL		
	13C2-8:2FTS	3.57	ng/mL		
	13C8-PFOSA	1.79	ng/mL		
	D3-NMEFOSA	2.12	ng/mL		
	D5-NETFOSA	2.47	ng/mL		
	D3-NMEFOSAA	3.55	ng/mL		
	D5-NETFOSAA	3.61	ng/mL		
	D7-NMEFOSE	22.6	ng/mL		
	D9-NETFOSE	23.6	ng/mL		
	13C3-HFPO-DA	7.07	ng/mL		



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (33)
 Acquired: 2023/04/14 - 21:22

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (33)
 Acquired: 2023/04/14 - 21:22

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

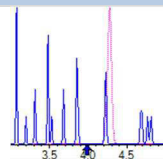
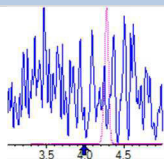
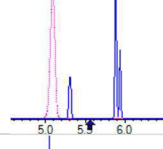
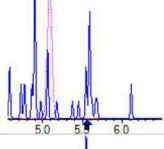
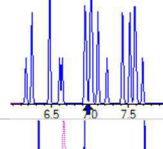
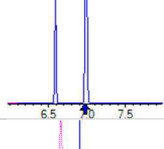
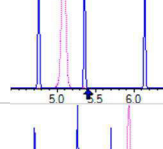
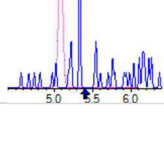
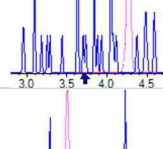
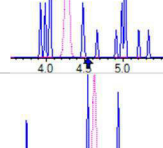
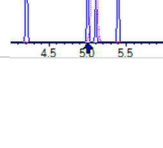
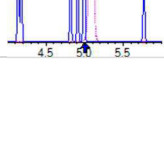
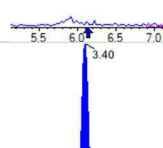
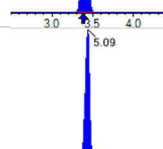
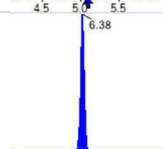
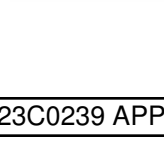


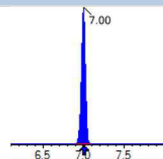
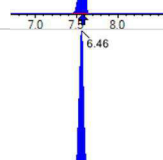
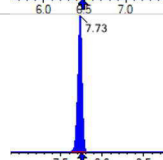
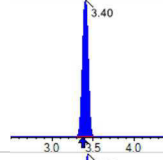
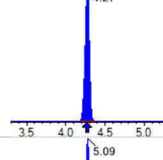
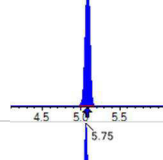
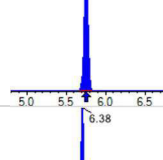
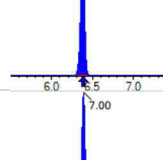
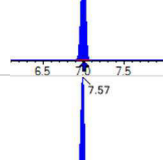
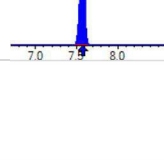
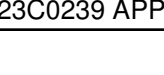
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (33)
 Acquired: 2023/04/14 - 21:22

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 145745	(3.40, N/A) (N/A, 0.03, N/A)	1210.8	N/A	1.1955 [1.0000]	119.6% { 115.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 228070	(5.09, N/A) (N/A, 0.00, N/A)	1547.5	N/A	1.1245 [1.0000]	112.4% { 114.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 350745	(6.38, N/A) (N/A, -0.01, N/A)	4422.5	N/A	1.1037 [1.0000]	110.4% { 105.9% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 317805	(7.00, N/A) (N/A, 0.00, N/A)	5769014.6	N/A	1.0471 [1.0000]	104.7% { 99.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 334090	(7.57, N/A) (N/A, -0.01, N/A)	8451.4	N/A	1.0296 [1.0000]	103.0% { 101.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 533426	(6.46, N/A) (N/A, -0.01, N/A)	4107.6	N/A	1.1911 [1.0000]	119.1% { 109.3% }			
13C4_PFOS_IIS	(503.0 / 79.9) 769732	(7.73, N/A) (N/A, -0.01, N/A)	1973.4	N/A	1.1318 [1.0000]	113.2% { 108.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1253270	(3.40, N/A) (N/A, 0.04, N/A)	4509.8	N/A	8.1104 [8.0000]	101.4% { 115.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 896864	(4.27, N/A) (N/A, 0.01, N/A)	3131.0	N/A	3.5107 [4.0000]	87.8% { 104.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 628898	(5.09, N/A) (N/A, 0.00, N/A)	2737.2	N/A	1.9454 [2.0000]	97.3% { 107.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 582113	(5.75, N/A) (N/A, 0.00, N/A)	2452.2	N/A	2.0616 [2.0000]	103.1% { 106.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 652309	(6.38, N/A) (N/A, -0.01, N/A)	1079.0	N/A	1.8843 [2.0000]	94.2% { 98.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 333597	(7.00, N/A) (N/A, 0.00, N/A)	3032.3	N/A	1.1173 [1.0000]	111.7% { 104.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 365379	(7.57, N/A) (N/A, 0.00, N/A)	16369.2	N/A	0.9749 [1.0000]	97.5% { 104.0% }			

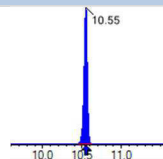
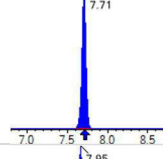
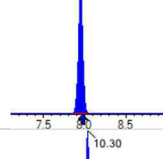
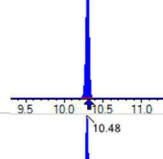
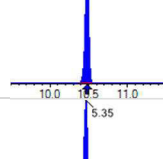
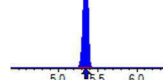


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (33)
 Acquired: 2023/04/14 - 21:22

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
13C7_PFUa_EIS	(570.0 / 525.0) 394203	(8.09, N/A) (N/A, -0.01, N/A)	3555.6	N/A	1.1331 [1.0000]	113.3% { 108.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 317401	(8.55, N/A) (N/A, -0.01, N/A)	1139.0	N/A	1.0655 [1.0000]	106.5% { 120.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 253759	(9.03, N/A) (N/A, -0.01, N/A)	888.3	N/A	0.9034 [1.0000]	90.3% { 108.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1464534	(5.03, N/A) (N/A, 0.00, N/A)	2622.3	N/A	1.7488 [2.0000]	87.4% { 110.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 903655	(6.46, N/A) (N/A, -0.01, N/A)	1334.8	N/A	1.8379 [2.0000]	91.9% { 101.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1826679	(7.73, N/A) (N/A, -0.01, N/A)	2881.4	N/A	1.9588 [2.0000]	97.9% { 110.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 295050	(4.86, N/A) (N/A, 0.00, N/A)	1375.2	N/A	3.9117 [4.0000]	97.8% { 123.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 350692	(6.14, N/A) (N/A, -0.01, N/A)	2175.5	N/A	4.0736 [4.0000]	101.8% { 121.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 406320	(7.33, N/A) (N/A, 0.00, N/A)	2136.3	N/A	3.5651 [4.0000]	89.1% { 109.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2711956	(9.72, N/A) (N/A, 0.00, N/A)	3099.9	N/A	1.7914 [2.0000]	89.6% { 110.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 684107	(10.37, N/A) (N/A, 0.00, N/A)	2764.4	N/A	2.1177 [2.0000]	105.9% { 109.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 658218	(10.55 , N/A) (N/A , 0.00 , N/A)	3088.9	N/A	2.4696 [2.0000]	123.5% { 117.5% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 709951	(7.71 , N/A) (N/A , -0.01 , N/A)	2393.2	N/A	3.5521 [4.0000]	88.8% { 109.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 592340	(7.95 , N/A) (N/A , -0.02 , N/A)	15352.8	N/A	3.6132 [4.0000]	90.3% { 106.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2421685	(10.30 , N/A) (N/A , 0.00 , N/A)	2304.7	N/A	22.5805 [20.0000]	112.9% { 111.4% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3341174	(10.48 , N/A) (N/A , 0.00 , N/A)	1875.1	N/A	23.5713 [20.0000]	117.9% { 114.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1289483	(5.35 , N/A) (N/A , 0.00 , N/A)	3444.4	N/A	7.0708 [8.0000]	88.4% { 106.3% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-CCB4	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01502
 Calibration: 2315014

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01502-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	8.94	ng/mL		
	13C5-PFPEA	9.58	ng/mL		
	13C5-PFHXA	4.16	ng/mL		
	13C4-PFHPA	5.79	ng/mL		
	13C8-PFOA	2.18	ng/mL		
	13C9-PFNA	1.06	ng/mL		
	13C6-PFDA	1.01	ng/mL		
	13C7-PFUnA	1.17	ng/mL		
	13C2-PFDOA	1.17	ng/mL		
	13C2-PFTEDA	1.03	ng/mL		
	13C3-PFBS	1.62	ng/mL		
	13C3-PFHXS	2.08	ng/mL		
	13C8-PFOS	1.98	ng/mL		
	13C2-4:2FTS	4.59	ng/mL		
	13C2-6:2FTS	4.94	ng/mL		
	13C2-8:2FTS	4.79	ng/mL		
	13C8-PFOSA	1.61	ng/mL		
	D3-NMEFOSA	1.40	ng/mL		
	D5-NETFOSA	1.79	ng/mL		
	D3-NMEFOSAA	4.29	ng/mL		
	D5-NETFOSAA	4.22	ng/mL		
	D7-NMEFOSE	17.5	ng/mL		
	D9-NETFOSSE	16.4	ng/mL		
	13C3-HFPO-DA	16.8	ng/mL		

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



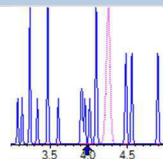
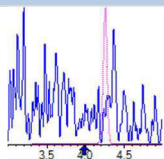
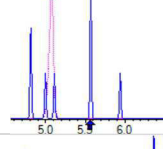
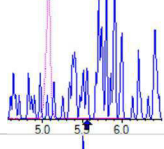
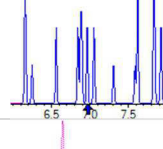
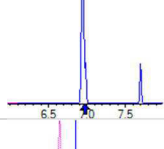
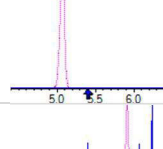
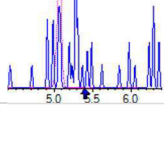
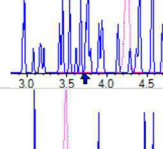
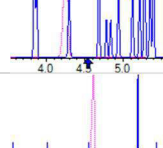
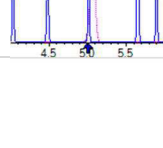
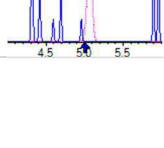
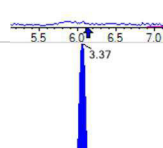
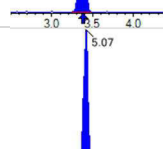
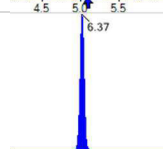
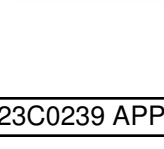
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (53)
 Acquired: 2023/04/15 - 01:39

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

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 129152	(3.37, N/A) (N/A, 0.00, N/A)	1096.8	N/A	1.0594 [1.0000]	105.9% { 102.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 91753	(5.07, N/A) (N/A, -0.02, N/A)	6161.1	N/A	0.4524 [1.0000]	45.2% { 45.9% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 355692	(6.37, N/A) (N/A, -0.01, N/A)	45741.1	N/A	1.1193 [1.0000]	111.9% { 107.4% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (53)
 Acquired: 2023/04/15 - 01:39

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 351689	(6.99, N/A) (N/A, -0.01, N/A)	8396.0	N/A	1.1588 [1.0000]	115.9% { 109.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 372731	(7.56, N/A) (N/A, -0.02, N/A)	1745.5	N/A	1.1487 [1.0000]	114.9% { 113.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 535337	(6.45, N/A) (N/A, -0.01, N/A)	1984.8	N/A	1.1953 [1.0000]	119.5% { 109.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 867760	(7.72, N/A) (N/A, -0.02, N/A)	1893.6	N/A	1.2760 [1.0000]	127.6% { 122.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1224414	(3.37, N/A) (N/A, 0.00, N/A)	4428.1	N/A	8.9416 [8.0000]	111.8% { 112.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 985082	(4.25, N/A) (N/A, -0.01, N/A)	2806.5	N/A	9.5850 [4.0000]	239.6% { 114.5% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 540786	(5.07, N/A) (N/A, -0.01, N/A)	1869.4	N/A	4.1582 [2.0000]	207.9% { 92.2% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 657795	(5.75, N/A) (N/A, -0.01, N/A)	15492.9	N/A	5.7907 [2.0000]	289.5% { 120.5% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 766664	(6.37, N/A) (N/A, -0.01, N/A)	1804.3	N/A	2.1838 [2.0000]	109.2% { 116.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 350618	(6.99, N/A) (N/A, -0.01, N/A)	11948.3	N/A	1.0611 [1.0000]	106.1% { 109.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 420507	(7.56, N/A) (N/A, -0.02, N/A)	4018.0	N/A	1.0056 [1.0000]	100.6% { 119.6% }			

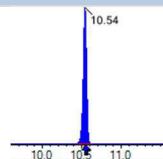
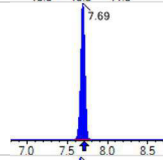
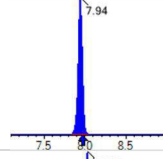
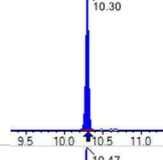
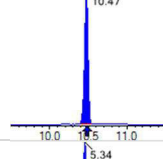
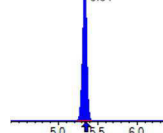


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (53)
 Acquired: 2023/04/15 - 01:39

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
13C7_PFUa_EIS	(570.0 / 525.0) 453838	(8.08, N/A) (N/A, -0.02, N/A)	19976.9	N/A	1.1692 [1.0000]	116.9% { 124.5% }			
13C2_PFDa_EIS	(615.0 / 570.0) 387525	(8.55, N/A) (N/A, -0.01, N/A)	1766.3	N/A	1.1660 [1.0000]	116.6% { 147.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 322246	(9.03, N/A) (N/A, 0.00, N/A)	1611.3	N/A	1.0283 [1.0000]	102.8% { 138.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1357576	(5.01, N/A) (N/A, -0.02, N/A)	3106.4	N/A	1.6153 [2.0000]	80.8% { 102.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1028190	(6.45, N/A) (N/A, -0.01, N/A)	2686.2	N/A	2.0837 [2.0000]	104.2% { 115.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2077384	(7.72, N/A) (N/A, -0.02, N/A)	3852.2	N/A	1.9760 [2.0000]	98.8% { 125.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 347785	(4.84, N/A) (N/A, -0.02, N/A)	1116.8	N/A	4.5943 [4.0000]	114.9% { 145.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 426456	(6.14, N/A) (N/A, -0.01, N/A)	2342.7	N/A	4.9360 [4.0000]	123.4% { 147.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 547509	(7.32, N/A) (N/A, -0.01, N/A)	1539.7	N/A	4.7867 [4.0000]	119.7% { 147.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2754441	(9.72, N/A) (N/A, 0.00, N/A)	4098.0	N/A	1.6139 [2.0000]	80.7% { 112.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 508655	(10.36, N/A) (N/A, 0.00, N/A)	1973.6	N/A	1.3967 [2.0000]	69.8% { 81.1% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 538681	(10.54 , N/A) (N/A , -0.01 , N/A)	2400.5	N/A	1.7928 [2.0000]	89.6% { 96.2% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 967324	(7.69 , N/A) (N/A , -0.02 , N/A)	2788.1	N/A	4.2930 [4.0000]	107.3% { 148.5% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 779931	(7.94 , N/A) (N/A , -0.02 , N/A)	5970.0	N/A	4.2200 [4.0000]	105.5% { 140.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2117042	(10.30 , N/A) (N/A , -0.01 , N/A)	1203.5	N/A	17.5100 [20.0000]	87.5% { 97.4% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2626442	(10.47 , N/A) (N/A , -0.01 , N/A)	883.6	N/A	16.4358 [20.0000]	82.2% { 89.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1236166	(5.34 , N/A) (N/A , -0.01 , N/A)	2334.9	N/A	16.8491 [8.0000]	210.6% { 101.9% }			S2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 2800444 (413.0 / 169.0) 924302	(6.44, 1.00) (0.00, N/A, 0.0)	1669.8 2328.2	0.3301 96.4 94.9	8.7875	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) 1116 (563.0 / 169.0) N/A	(8.22, 1.00) (0.03, N/A, #Value!)	15.7 N/A	N/A 0.0 0.0	0.0038	N/A			IR1,
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



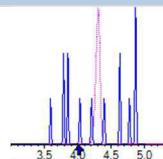
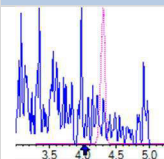
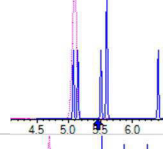
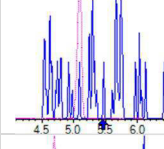
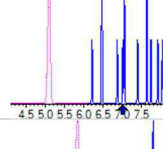
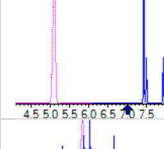
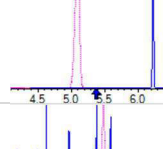
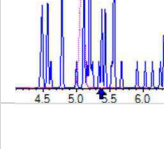
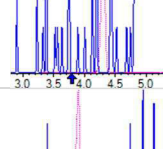
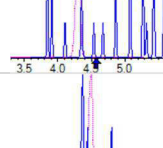
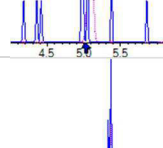
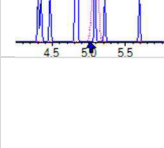
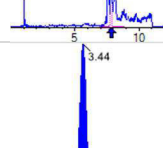
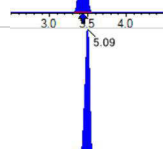
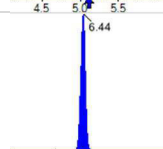
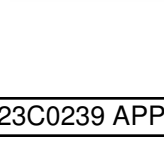
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01245-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-30A (4)
 Acquired: 2023/03/30 - 12:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 376 (349.0 / 99.0) N/A	(5.60, 0.86) (N/A, -0.20, #Value!)	288.6 N/A	N/A 0.0 0.0	0.0005	N/A			IR1,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) 1100 (449.0 / 99.0) N/A	(7.20, 0.92) (N/A, 0.01, #Value!)	242.7 N/A	N/A 0.0 0.0	0.0013	N/A			IR1,
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 13737317 (498.0 / 478.0) 325407	(9.79, 1.00) (-0.01, N/A, 0.0)	2983.6 1473.9	0.0237 103.8 93.0	10.7502	N/A			
NMeFOSA	(512.0 / 219.0) 2664569 (512.0 / 169.0) 2265173	(10.39, 1.00) (0.00, N/A, 1.0)	4458.6 5472.9	0.8501 98.7 98.2	8.7304	N/A			
NEtFOSA	(526.0 / 219.0) 3042247 (526.0 / 169.0) 3788486	(10.55, 1.00) (-0.01, N/A, 0.6)	5332.6 6079.0	1.2453 98.6 98.3	8.7646	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) 1277647	(10.33, 1.00) (0.01, N/A, 0.0)	1866.9	N/A 0.0 0.0	9.8171	N/A			
NEtFOSE	(630.0 / 59.0) 1593799	(10.50, 1.00) (0.01, N/A, 0.0)	1139.9	N/A 0.0 0.0	9.8332	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 162881	(3.44, N/A) (N/A, 0.00, N/A)	1428.2	N/A	0.8383 [1.0000]	83.8% { 112.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 255634	(5.09, N/A) (N/A, 0.00, N/A)	33186.7	N/A	0.9517 [1.0000]	95.2% { 108.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 338704	(6.44, N/A) (N/A, 0.01, N/A)	2175.6	N/A	0.7531 [1.0000]	75.3% { 93.5% }			

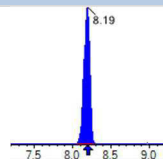
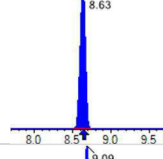
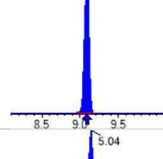
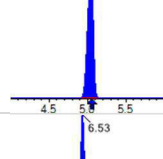
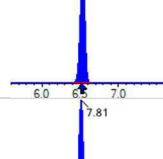
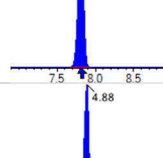
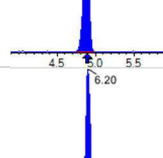
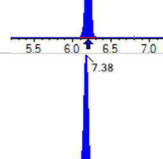
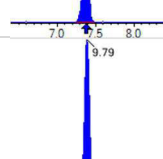
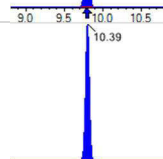
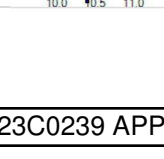


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01245-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-30A (4)
 Acquired: 2023/03/30 - 12:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 360922	(7.05, N/A) (N/A, 0.00, N/A)	9280.7	N/A	0.8973 [1.0000]	89.7% { 104.5% }			
13C2_PFDA_IIS	(515.0 / 470.1) 342318	(7.63, N/A) (N/A, 0.00, N/A)	426069.9	N/A	0.8454 [1.0000]	84.5% { 102.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 485131	(6.53, N/A) (N/A, 0.00, N/A)	3670.0	N/A	0.7550 [1.0000]	75.5% { 93.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 765864	(7.81, N/A) (N/A, 0.00, N/A)	1693.6	N/A	0.9696 [1.0000]	97.0% { 105.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1372800	(3.44, N/A) (N/A, 0.00, N/A)	4474.4	N/A	8.0685 [8.0000]	100.9% { 114.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1198396	(4.30, N/A) (N/A, 0.00, N/A)	3994.5	N/A	3.9860 [4.0000]	99.7% { 108.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 693377	(5.09, N/A) (N/A, 0.00, N/A)	4266.9	N/A	1.8965 [2.0000]	94.8% { 106.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 596088	(5.78, N/A) (N/A, 0.00, N/A)	4750.6	N/A	1.9609 [2.0000]	98.0% { 109.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 668989	(6.44, N/A) (N/A, 0.00, N/A)	2443.7	N/A	2.1582 [2.0000]	107.9% { 101.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 350589	(7.05, N/A) (N/A, 0.00, N/A)	2807.8	N/A	1.0610 [1.0000]	106.1% { 114.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 381068	(7.63, N/A) (N/A, 0.00, N/A)	4080.0	N/A	1.0348 [1.0000]	103.5% { 103.8% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 370709	(8.19, N/A) (N/A, 0.00, N/A)	5779.9	N/A	0.9665 [1.0000]	96.7% { 104.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 344174	(8.63, N/A) (N/A, 0.00, N/A)	9569.4	N/A	0.9499 [1.0000]	95.0% { 105.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 318217	(9.09, N/A) (N/A, 0.01, N/A)	1446.2	N/A	0.8942 [1.0000]	89.4% { 112.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1673223	(5.04, N/A) (N/A, 0.00, N/A)	3281.7	N/A	2.3365 [2.0000]	116.8% { 104.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 911446	(6.53, N/A) (N/A, 0.00, N/A)	1568.8	N/A	2.2442 [2.0000]	112.2% { 100.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1835184	(7.81, N/A) (N/A, 0.00, N/A)	1998.3	N/A	2.0271 [2.0000]	101.4% { 102.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 314460	(4.88, N/A) (N/A, 0.00, N/A)	774.9	N/A	4.3316 [4.0000]	108.3% { 101.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 365049	(6.20, N/A) (N/A, 0.00, N/A)	1312.7	N/A	4.3260 [4.0000]	108.2% { 111.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 421203	(7.38, N/A) (N/A, 0.00, N/A)	1146.1	N/A	4.4244 [4.0000]	110.6% { 102.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3071657	(9.79, N/A) (N/A, 0.01, N/A)	3871.2	N/A	1.8445 [2.0000]	92.2% { 98.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 717857	(10.39, N/A) (N/A, 0.00, N/A)	2251.3	N/A	1.9435 [2.0000]	97.2% { 102.9% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01245-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-03-28B
 Path: S2023-03-30A (4)
 Acquired: 2023/03/30 - 12:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 661383	(10.56 , N/A) (N/A , 0.00 , N/A)	3039.8	N/A	2.0665 [2.0000]	103.3% { 111.2% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 814104	(7.78 , N/A) (N/A , 0.00 , N/A)	1722.6	N/A	3.9846 [4.0000]	99.6% { 97.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 679741	(8.05 , N/A) (N/A , 0.00 , N/A)	678073.6	N/A	4.1934 [4.0000]	104.8% { 108.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2384003	(10.33 , N/A) (N/A , 0.00 , N/A)	2002.2	N/A	20.9709 [20.0000]	104.9% { 98.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3212840	(10.50 , N/A) (N/A , 0.00 , N/A)	1808.0	N/A	21.4345 [20.0000]	107.2% { 100.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1472368	(5.33 , N/A) (N/A , 0.00 , N/A)	3495.1	N/A	8.4411 [8.0000]	105.5% { 101.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOS	(499.0 / 80.0) 27583 (499.0 / 99.0) 2164771	(7.42 , 0.95) (-0.39 , N/A , -23.7)	25.1	78.4810 34423.9 34116.7	0.0274	N/A			
TDCA	(499.0 / 80.0) 7048214	(6.15 , 0.79) (N/A , #Value! , 0.0)	150726.1	N/A 0.0 0.0	7.5072	N/A			

R.T.PFOS – R.T.TDCA > 1 minute

7.42 - 6.15 = 1.27 Pass

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 3000770 (413.0 / 169.0) 1037247	(6.39, 1.00) (0.00, N/A, -0.1)	2342.2 4230.9	0.3457 110.4 110.4	8.5921	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (4)
 Acquired: 2023/04/14 - 15:08

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
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

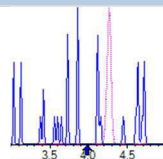
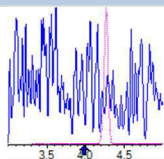
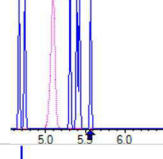
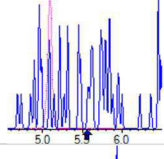
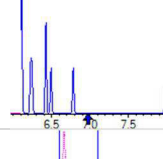
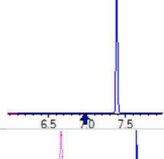
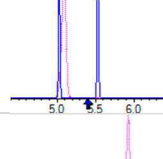
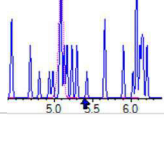
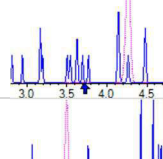
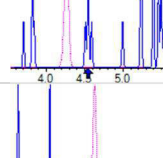
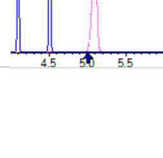
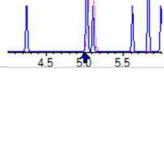
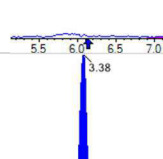
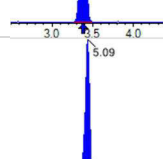
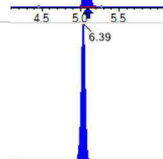
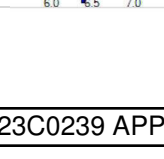


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (4)
 Acquired: 2023/04/14 - 15:08

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
PFOSA	(498.0 / 78.0) 11218136 (498.0 / 478.0) 278838	(9.72 , 1.00) (0.00 , N/A , 0.0)	3710.2 1009.3	0.0249 100.4 112.0	10.2358	N/A			
NMeFOSA	(512.0 / 219.0) 2756812 (512.0 / 169.0) 2322923	(10.37 , 1.00) (0.00 , N/A , 1.2)	5548.4 4765.8	0.8426 97.1 99.8	9.5216	N/A			
NEtFOSA	(526.0 / 219.0) 3185816 (526.0 / 169.0) 3996285	(10.54 , 1.00) (-0.01 , N/A , 0.9)	5629.7 5149.9	1.2544 100.3 100.7	9.0562	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) 1271352	(10.31 , 1.00) (0.01 , N/A , 0.0)	1494.3	N/A 0.0 0.0	9.5872	N/A			
NEtFOSE	(630.0 / 59.0) 1625076	(10.49 , 1.00) (0.01 , N/A , 0.0)	1341.6	N/A 0.0 0.0	9.7351	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) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 155588	(3.38, N/A) (N/A, 0.01, N/A)	1153.8	N/A	1.2763 [1.0000]	127.6% { 123.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 234924	(5.09, N/A) (N/A, 0.01, N/A)	1915.8	N/A	1.1583 [1.0000]	115.8% { 117.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 377451	(6.39, N/A) (N/A, 0.00, N/A)	6154.9	N/A	1.1877 [1.0000]	118.8% { 114.0% }			

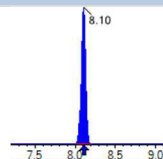
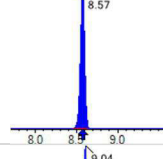
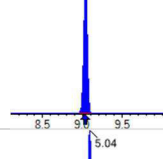
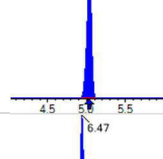
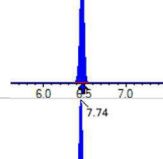
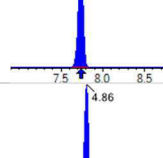
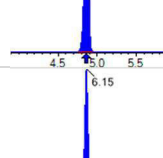
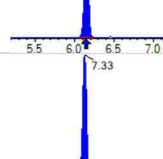
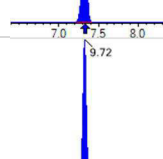
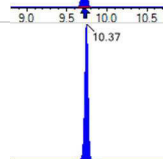
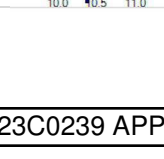


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (4)
 Acquired: 2023/04/14 - 15:08

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
13C5_PFNA_IIS	(468.0 / 423.0) 385099	(6.99, N/A) (N/A, -0.01, N/A)	6087.5	N/A	1.2689 [1.0000]	126.9% { 120.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 372359	(7.57, N/A) (N/A, -0.01, N/A)	2426.8	N/A	1.1476 [1.0000]	114.8% { 113.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 573402	(6.47, N/A) (N/A, 0.00, N/A)	13213.1	N/A	1.2803 [1.0000]	128.0% { 117.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 890138	(7.74, N/A) (N/A, -0.01, N/A)	1810.2	N/A	1.3089 [1.0000]	130.9% { 125.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1318470	(3.38, N/A) (N/A, 0.01, N/A)	4669.5	N/A	7.9925 [8.0000]	99.9% { 121.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 978090	(4.27, N/A) (N/A, 0.00, N/A)	3419.5	N/A	3.7170 [4.0000]	92.9% { 113.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 690199	(5.09, N/A) (N/A, 0.01, N/A)	2493.7	N/A	2.0728 [2.0000]	103.6% { 117.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 652060	(5.76, N/A) (N/A, 0.01, N/A)	2265.8	N/A	2.2419 [2.0000]	112.1% { 119.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 740809	(6.38, N/A) (N/A, 0.00, N/A)	16745.3	N/A	1.9885 [2.0000]	99.4% { 112.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 352878	(6.99, N/A) (N/A, 0.00, N/A)	3123.4	N/A	0.9753 [1.0000]	97.5% { 110.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 406921	(7.57, N/A) (N/A, -0.01, N/A)	11078.4	N/A	0.9741 [1.0000]	97.4% { 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
13C7_PFUa_EIS	(570.0 / 525.0) 414961	(8.10, N/A) (N/A, 0.00, N/A)	2423.4	N/A	1.0701 [1.0000]	107.0% { 113.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 354312	(8.57, N/A) (N/A, 0.01, N/A)	1954.8	N/A	1.0672 [1.0000]	106.7% { 134.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 289073	(9.04, N/A) (N/A, 0.01, N/A)	1294.9	N/A	0.9233 [1.0000]	92.3% { 124.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1509552	(5.04, N/A) (N/A, 0.01, N/A)	3510.6	N/A	1.6769 [2.0000]	83.8% { 114.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1022440	(6.47, N/A) (N/A, 0.00, N/A)	2939.2	N/A	1.9345 [2.0000]	96.7% { 115.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2001234	(7.74, N/A) (N/A, -0.01, N/A)	3884.6	N/A	1.8557 [2.0000]	92.8% { 120.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 293320	(4.86, N/A) (N/A, 0.01, N/A)	1427.6	N/A	3.6176 [4.0000]	90.4% { 122.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 369067	(6.15, N/A) (N/A, 0.00, N/A)	1868.7	N/A	3.9882 [4.0000]	99.7% { 127.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 418745	(7.33, N/A) (N/A, 0.00, N/A)	3563.3	N/A	3.4179 [4.0000]	85.4% { 112.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2501724	(9.72, N/A) (N/A, 0.00, N/A)	4032.0	N/A	1.4290 [2.0000]	71.5% { 102.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 697891	(10.37, N/A) (N/A, 0.00, N/A)	2417.3	N/A	1.8682 [2.0000]	93.4% { 111.3% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (4)
 Acquired: 2023/04/14 - 15:08

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 669715	(10.54 , N/A) (N/A , 0.00 , N/A)	3264.6	N/A	2.1728 [2.0000]	108.6% { 119.6% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 750869	(7.71 , N/A) (N/A , -0.01 , N/A)	2101.8	N/A	3.2486 [4.0000]	81.2% { 115.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 624999	(7.97 , N/A) (N/A , 0.00 , N/A)	5306.8	N/A	3.2967 [4.0000]	82.4% { 112.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2429255	(10.30 , N/A) (N/A , 0.00 , N/A)	1814.7	N/A	19.5872 [20.0000]	97.9% { 111.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3390063	(10.48 , N/A) (N/A , 0.00 , N/A)	1931.7	N/A	20.6811 [20.0000]	103.4% { 115.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1378925	(5.36 , N/A) (N/A , 0.01 , N/A)	2456.6	N/A	7.3406 [8.0000]	91.8% { 113.7% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01502-PEM2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (5)
 Acquired: 2023/04/14 - 15:21

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOS	(499.0 / 80.0) 29967 (499.0 / 99.0) N/A	(7.36 , 0.95) (-0.39 , N/A , #Value!)	6.8	N/A 0.0 0.0	0.0266	N/A			
TDCA	(499.0 / 80.0) 8202132	(6.13 , 0.79) (N/A , #Value! , 0.0)	14849.0	N/A 0.0 0.0	8.4717	N/A			

R.T.PFOS – R.T.TDCA > 1 minute

7.36 - 6.13 = 1.23 Pass

QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-BLK1
Sampled:		Prepared:	04/10/23 08:18
Solids:		Preparation:	EPA 1633
Batch:	BCD0119	Sequence:	SC01502
Column:	1	Calibration:	2315014
		Instrument:	Saphira

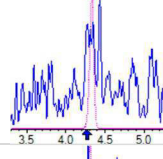
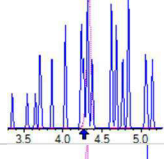
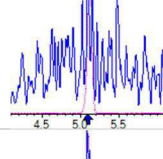
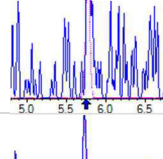
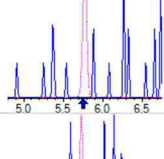
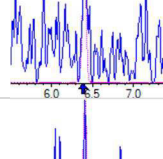
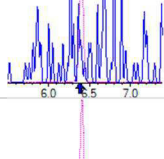
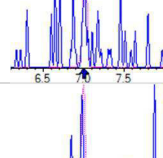
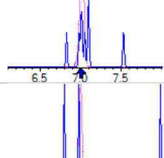
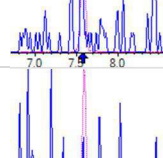
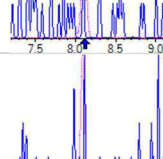
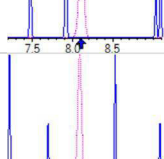
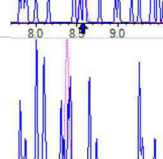
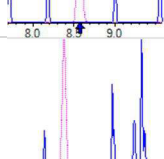
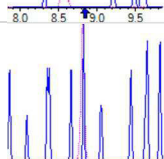
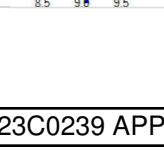
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.30 U	0.40	0.30	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.30 U	0.40	0.30	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.30 U	0.40	0.30	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.166 J	0.40	0.20	0.064	MI2, J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.30 U	0.40	0.30	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-BLK1
Sampled:		File ID:	S2023-04-14A (7)
Solids:		Prepared:	04/10/23 08:18
Batch:	BCD0119	Analyzed:	04/14/23 15:47
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Sequence:	SC01502
		Calibration:	2315014
		Instrument:	Saphira

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

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 41435 (499.0 / 99.0) 6227	(7.75, 1.00) (0.00, N/A, 0.4)	79.0 15140.7	0.1503 67.2 65.3	0.0416	N/A			M12 ABK 4/16/23
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (7)
 Acquired: 2023/04/14 - 15:47

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
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

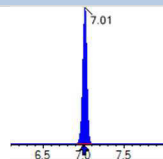
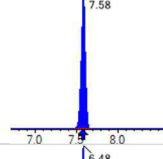
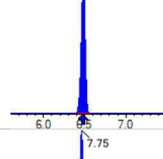
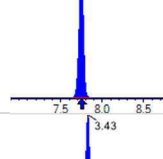
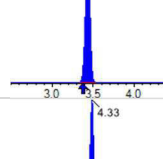
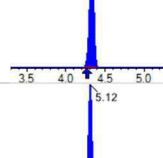
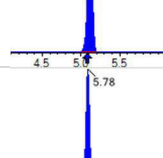
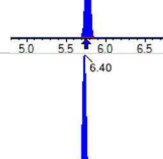
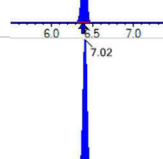
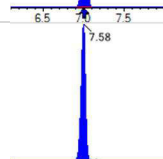
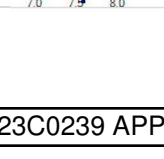


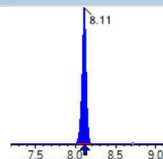
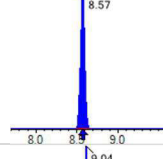
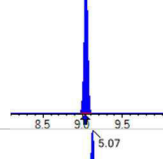
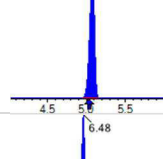
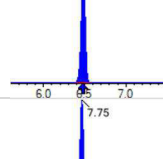
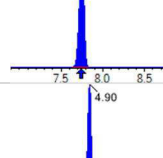
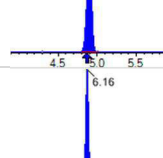
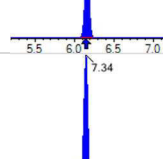
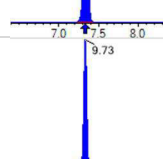
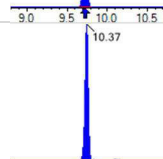
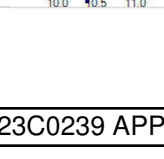
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (7)
 Acquired: 2023/04/14 - 15:47

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
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 164463	(3.43, N/A) (N/A, 0.06, N/A)	1442.8	N/A	1.3491 [1.0000]	134.9% { 130.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 248123	(5.12, N/A) (N/A, 0.03, N/A)	2665.5	N/A	1.2233 [1.0000]	122.3% { 124.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 402328	(6.40, N/A) (N/A, 0.02, N/A)	2727.4	N/A	1.2660 [1.0000]	126.6% { 121.5% }			

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
13C5_PFNA_IIS	(468.0 / 423.0) 386203	(7.01, N/A) (N/A, 0.02, N/A)	2651.1	N/A	1.2725 [1.0000]	127.3% { 120.4% }			
13C2_PFDA_IIS	(515.0 / 470.1) 399435	(7.58, N/A) (N/A, 0.01, N/A)	2556.9	N/A	1.2310 [1.0000]	123.1% { 121.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 597524	(6.48, N/A) (N/A, 0.02, N/A)	2846.9	N/A	1.3342 [1.0000]	133.4% { 122.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 888222	(7.75, N/A) (N/A, 0.00, N/A)	1942.9	N/A	1.3061 [1.0000]	130.6% { 125.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1245849	(3.43, N/A) (N/A, 0.06, N/A)	5709.7	N/A	7.1448 [8.0000]	89.3% { 114.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 982507	(4.33, N/A) (N/A, 0.07, N/A)	3316.3	N/A	3.5351 [4.0000]	88.4% { 114.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 622158	(5.12, N/A) (N/A, 0.03, N/A)	2582.7	N/A	1.7690 [2.0000]	88.5% { 106.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 593033	(5.78, N/A) (N/A, 0.02, N/A)	3083.4	N/A	1.9305 [2.0000]	96.5% { 108.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 708112	(6.40, N/A) (N/A, 0.02, N/A)	2614.5	N/A	1.7832 [2.0000]	89.2% { 107.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 307978	(7.02, N/A) (N/A, 0.02, N/A)	2191.7	N/A	0.8488 [1.0000]	84.9% { 96.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 343262	(7.58, N/A) (N/A, 0.01, N/A)	1696.2	N/A	0.7660 [1.0000]	76.6% { 97.7% }			

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
13C7_PFUa_EIS	(570.0 / 525.0) 345856	(8.11, N/A) (N/A, 0.01, N/A)	7067.6	N/A	0.8315 [1.0000]	83.1% { 94.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 285637	(8.57, N/A) (N/A, 0.01, N/A)	6249701.6	N/A	0.8020 [1.0000]	80.2% { 108.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 220721	(9.04, N/A) (N/A, 0.01, N/A)	1801.2	N/A	0.6572 [1.0000]	65.7% { 94.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1441085	(5.07, N/A) (N/A, 0.04, N/A)	2308.2	N/A	1.5362 [2.0000]	76.8% { 109.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 940537	(6.48, N/A) (N/A, 0.02, N/A)	2768.9	N/A	1.7077 [2.0000]	85.4% { 105.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1762313	(7.75, N/A) (N/A, 0.01, N/A)	3532.3	N/A	1.6377 [2.0000]	81.9% { 106.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 286075	(4.90, N/A) (N/A, 0.04, N/A)	1030.2	N/A	3.3858 [4.0000]	84.6% { 119.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 335126	(6.16, N/A) (N/A, 0.02, N/A)	1320.5	N/A	3.4752 [4.0000]	86.9% { 116.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 363222	(7.34, N/A) (N/A, 0.01, N/A)	1825.5	N/A	2.8451 [4.0000]	71.1% { 97.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2356186	(9.73, N/A) (N/A, 0.01, N/A)	3162.9	N/A	1.3488 [2.0000]	67.4% { 96.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 194933	(10.37, N/A) (N/A, 0.00, N/A)	1134.1	N/A	0.5229 [2.0000]	26.1% { 31.1% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (7)
 Acquired: 2023/04/14 - 15:47

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 137089	(10.55 , N/A) (N/A , 0.00 , N/A)	1141.0	N/A	0.4457 [2.0000]	22.3% { 24.5% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 644138	(7.72 , N/A) (N/A , 0.01 , N/A)	2072.6	N/A	2.7929 [4.0000]	69.8% { 98.9% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 498818	(7.97 , N/A) (N/A , 0.00 , N/A)	4349.0	N/A	2.6368 [4.0000]	65.9% { 90.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1147005	(10.31 , N/A) (N/A , 0.00 , N/A)	1177.0	N/A	9.2683 [20.0000]	46.3% { 52.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1690770	(10.48 , N/A) (N/A , 0.00 , N/A)	1296.6	N/A	10.3368 [20.0000]	51.7% { 57.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1278041	(5.37 , N/A) (N/A , 0.02 , N/A)	2187.2	N/A	6.4416 [8.0000]	80.5% { 105.4% }			

ANALYSIS DATA SHEET

LCS

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-BS1
Sampled:		Prepared:	04/10/23 08:18
Solids:		Preparation:	EPA 1633
Batch:	BCD0119	Sequence:	SC01502
Column:	1	Calibration:	2315014
		Instrument:	Saphira
		File ID:	S2023-04-14A (8)
		Analyzed:	04/14/23 16:00
		Dilution:	1

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	16.2	1.6	0.21	
PFPEA	7.80	0.80	0.065	
PFHXA	4.00	0.40	0.055	
PFHPA	4.25	0.40	0.041	
PFOA	4.07	0.40	0.15	
PFNA	4.03	0.40	0.082	
PFDA	3.70	0.40	0.10	
PFUnA	3.66	0.40	0.16	
PFDOA	4.35	0.40	0.11	
PFTRDA	3.99	0.40	0.20	
PFTEDA	4.44	0.40	0.20	
PFBS	3.43	0.40	0.037	
PFPEs	3.83	0.40	0.063	
PFHXS	3.64	0.40	0.032	
PFHPS	4.01	0.40	0.051	
PFOS	3.74	0.40	0.064	
PFNS	3.55	0.40	0.12	
PFDS	3.21	0.40	0.15	
PFDOS	3.19	0.40	0.12	
4:2FTS	14.4	1.6	0.29	
6:2FTS	17.2	1.6	0.31	
8:2FTS	14.9	1.6	0.082	
PFOSA	4.73	0.40	0.10	
NMeFOSA	15.6	1.6	0.47	
NEtFOSA	15.4	1.6	0.41	
NMeFOSAA	3.67	0.40	0.11	
NEtFOSAA	3.58	0.40	0.11	
NMeFOSE	17.2	1.6	1.0	
NEtFOSE	15.7	1.6	1.0	
HFPO-DA	7.95	1.6	0.17	

ANALYSIS DATA SHEET**LCS**

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-BS1
Sampled:		Prepared:	04/10/23 08:18
Solids:		Preparation:	EPA 1633
Batch:	BCD0119	Sequence:	SC01502
Column:	1	Calibration:	2315014
			Instrument: Saphira
			File ID: S2023-04-14A (8)
			Analyzed: 04/14/23 16:00
			Dilution: 1

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	8.44	0.80	0.12	
PFEESA	6.95	0.80	0.11	
PFMPA	8.79	0.80	0.054	
PFMBA	7.79	0.80	0.091	
NFDHA	7.68	0.80	0.30	
9CL-PF3ONS	7.99	0.80	0.21	
11CL-PF3OUDS	7.13	0.80	0.21	
3:3FTCA	16.1	1.6	0.57	
5:3FTCA	14.8	1.6	0.44	
7:3FTCA	15.5	1.6	0.55	



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (8)
 Acquired: 2023/04/14 - 16:00

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	(213.0 / 169.0) 556042	(3.42, 1.00) (0.00, N/A, 0.0)	275.3	N/A 0.0 0.0	4.0561 [4.0000]	101.4%			
PFPeA	(263.0 / 219.0) 485611 (263.0 / 69.0) 5073	(4.32, 1.00) (0.00, N/A, 0.3)	1252.1 85.9	0.0104 79.6 89.2	1.9496 [2.0000]	97.5%			
PFHxA	(313.0 / 269.0) 311542 (313.0 / 119.0) 27212	(5.12, 1.00) (0.00, N/A, 0.1)	443.6 407.0	0.0873 80.0 89.7	0.9992 [1.0000]	99.9%			
PFHpA	(363.0 / 319.0) 278841 (363.0 / 169.0) 79165	(5.78, 1.00) (0.00, N/A, 0.2)	946.3 1697.7	0.2839 93.0 91.2	1.0635 [1.0000]	106.4%			
PFOA	(413.0 / 369.0) 356444 (413.0 / 169.0) 105224	(6.40, 1.00) (0.00, N/A, -0.3)	747.1 701.5	0.2952 94.3 94.3	1.0163 [1.0000]	101.6%			
PFNA	(463.0 / 419.0) 318113 (463.0 / 169.0) 60170	(7.02, 1.00) (0.00, N/A, 0.0)	2865.4 26412.0	0.1891 88.6 91.7	1.0065 [1.0000]	100.6%			
PFDA	(513.0 / 469.0) 340617 (513.0 / 169.0) 38785	(7.59, 1.00) (0.00, N/A, -0.4)	816.9 2065.4	0.1139 99.3 102.1	0.9261 [1.0000]	92.6%			
PFUnA	(563.0 / 519.0) 324860 (563.0 / 169.0) 34021	(8.12, 1.00) (0.00, N/A, 0.3)	1122.1 662.2	0.1047 88.6 92.0	0.9151 [1.0000]	91.5%			
PFDoA	(613.0 / 569.0) 304922 (613.0 / 169.0) 47985	(8.59, 1.00) (0.00, N/A, 0.1)	1074.4 3335.1	0.1574 91.8 106.5	1.0883 [1.0000]	108.8%			
PFTrDA	(663.0 / 619.0) 254734 (663.0 / 169.0) 53301	(8.86, 1.03) (N/A, 0.02, 0.2)	1166.7 4531.5	0.2092 84.4 80.5	0.9978 [1.0000]	99.8%			
PFTeDA	(713.0 / 669.0) 252270 (713.0 / 169.0) 49560	(9.04, 1.00) (0.00, N/A, 0.1)	1333.3 618.5	0.1965 97.5 98.8	1.1102 [1.0000]	111.0%			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (8)
 Acquired: 2023/04/14 - 16:00

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	(299.0 / 80.0) 462918 (299.0 / 99.0) 308850	(5.08, 1.00) (0.00, N/A, 0.0)	13670.3 2382.6	0.6672 103.8 100.7	0.8563 [0.8847]	96.8%			
PFPeS	(349.0 / 80.0) 826534 (349.0 / 99.0) 284008	(5.79, 0.89) (N/A, 0.02, -0.1)	4263.3 3251.6	0.3428 101.1 98.6	0.9575 [0.9384]	102.0%			
PFHxS	(399.0 / 80.0) 671414 (399.0 / 99.0) 243791	(6.48, 1.00) (0.00, N/A, 0.1)	8266459.4 4417217.0	0.3631 104.8 105.3	0.9106 [0.9110]	100.0%			
PFHpS	(449.0 / 80.0) 786383 (449.0 / 99.0) 218671	(7.15, 0.92) (N/A, 0.02, 0.1)	17818546.4 52037.0	0.2781 100.2 100.5	1.0033 [0.9514]	105.5%			
PFOS	(499.0 / 80.0) 1027471 (499.0 / 99.0) 221544	(7.76, 1.00) (0.00, N/A, 0.0)	747.7 1672.2	0.2156 96.4 93.6	0.9341 [0.9275]	100.7%			
PFNS	(549.0 / 80.0) 912718 (549.0 / 99.0) 223983	(8.31, 1.07) (N/A, 0.02, 0.0)	94578.7 416365.5	0.2454 101.4 101.1	0.8879 [0.9599]	92.5%			
PFDS	(599.0 / 80.0) 933375 (599.0 / 99.0) 219661	(8.72, 1.12) (N/A, 0.02, 0.1)	7802.6 1928.9	0.2353 105.0 105.1	0.8032 [0.9631]	83.4%			
PFDoS	(699.0 / 80.0) 712029 (699.0 / 99.0) 153493	(9.12, 1.18) (N/A, 0.01, -0.1)	2519.1 1127.6	0.2156 90.1 100.0	0.7965 [0.9696]	82.2%			
4:2FTS	(327.0 / 307.0) 764034 (327.0 / 81.0) 471569	(4.90, 1.00) (0.00, N/A, 0.1)	2364.8 659.0	0.6172 90.8 100.0	3.6045 [3.7381]	96.4%			
6:2FTS	(427.0 / 407.0) 625104 (427.0 / 81.0) 460284	(6.16, 1.00) (0.00, N/A, 0.1)	1161.1 1311.6	0.7363 104.6 102.0	4.2933 [3.7962]	113.1%			
8:2FTS	(527.0 / 507.0) 561019 (527.0 / 81.0) 405881	(7.35, 1.00) (0.00, N/A, 0.0)	2118.4 1050.0	0.7235 107.1 95.9	3.7262 [3.8332]	97.2%			



Chemist: HGH
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BCD0119-BS1
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
Path: S2023-04-14A (8)
Acquired: 2023/04/14 - 16:00

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
PFOSA	(498.0 / 78.0) 1314135 (498.0 / 478.0) 31471	(9.73, 1.00) (0.00, N/A, 0.1)	3016.8 285.3	0.0239 96.7 107.9	1.1830 [1.0000]	118.3%			
NMeFOSA	(512.0 / 219.0) 450565 (512.0 / 169.0) 397505	(10.37, 1.00) (0.00, N/A, 1.0)	2709.6 1706.0	0.8822 101.7 104.5	3.9075 [4.0000]	97.7%			
NEFOSA	(526.0 / 219.0) 491368 (526.0 / 169.0) 626679	(10.54, 1.00) (-0.01, N/A, 0.8)	1882.8 2550.8	1.2754 102.0 102.4	3.8621 [4.0000]	96.6%			
NMeFOSAA	(570.0 / 419.0) 139497 (570.0 / 483.0) 67569	(7.74, 1.00) (0.00, N/A, -0.2)	17287.6 243.4	0.4844 104.6 90.9	0.9175 [1.0000]	91.8%			
NEIFOSAA	(584.0 / 419.0) 110010 (584.0 / 526.0) 61898	(7.99, 1.00) (0.01, N/A, 0.2)	26718.8 460.2	0.5627 92.2 98.2	0.8946 [1.0000]	89.5%			
NMeFOSE	(616.0 / 59.0) 261588	(10.31, 1.00) (0.01, N/A, 0.0)	459.1	N/A 0.0 0.0	4.2970 [4.0000]	107.4%			
NEtFOSE	(630.0 / 59.0) 506530	(10.49, 1.00) (0.01, N/A, 0.0)	692.3	N/A 0.0 0.0	3.9166 [4.0000]	97.9%			
HFPO-DA	(285.0 / 169.0) 285520 (285.0 / 185.0) 774782	(5.38, 1.00) (0.00, N/A, 0.1)	1588.7 2096.1	2.7136 104.3 104.3	1.9874 [2.0000]	99.4%			
ADONA	(377.0 / 85.0) 1083323 (377.0 / 251.0) 108365	(6.00, 1.12) (N/A, 0.02, 0.1)	2957.2 24441.6	0.1000 100.8 98.5	2.1104 [1.8854]	111.9%			
9CI-Pf3ONS	(531.0 / 351.0) 3086308 (533.0 / 353.0) 938512	(8.17, 1.52) (N/A, 0.02, -0.1)	3465.6 1647.2	0.3041 104.7 93.3	1.9970 [1.8665]	107.0%			
11CI-PF3OUDS	(631.0 / 451.0) 1627512 (633.0 / 453.0) 590366	(8.91, 1.66) (N/A, 0.01, 0.0)	3943.4 3508.5	0.3627 108.2 107.2	1.7816 [1.8864]	94.4%			



Chemist: HGH
Instrument: Saphira

Sample I.D.: BCD0119-BS1

DF, IV: 1, 10.0µL

Quant Method: 1633 - S2023-04-12A

Path: S2023-04-14A (8)

Type: Sciex Q3 5500

Acquisition Method: 1633 2023-03-28.dam

Acquired: 2023/04/14 - 16:00

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
3:3FTCA	(241.0 / 177.0) 36687 (241.0 / 117.0) 58086	(4.08, 0.94) (N/A, 0.10, 0.1)	47.5 34.1	1.5833 95.9 98.1	4.0196 [4.0000]	100.5%			
5:3FTCA	(341.0 / 236.7) 181713 (341.0 / 217.0) 335711	(5.59, 1.09) (N/A, 0.04, 0.2)	1018.1 600.8	1.8475 117.8 111.9	3.7079 [4.0000]	92.7%			
7:3FTCA	(441.0 / 317.0) 333117 (441.0 / 337.0) 285176	(6.98, 1.36) (N/A, 0.01, -0.3)	693.9 1021.8	0.8561 99.4 101.2	3.8816 [4.0000]	97.0%			
PFEESA	(315.0 / 135.0) 681715 (315.0 / 83.0) 164625	(5.43, 1.06) (N/A, 0.03, 0.1)	3072.3 386.8	0.2415 99.0 99.7	1.7381 [1.7849]	97.4%			
PFMPA	(229.0 / 85.0) 116530	(3.78, 0.88) (N/A, 0.06, 0.0)	2771.2	N/A 0.0 0.0	2.1969 [2.0000]	109.8%			
PFMBA	(279.0 / 85.0) 378126	(4.59, 1.06) (N/A, 0.06, 0.0)	2388.2	N/A 0.0 0.0	1.9469 [2.0000]	97.3%			
NFDHA	(295.0 / 201.0) 306032 (295.0 / 85.0) 302372	(5.04, 0.98) (N/A, 0.04, 0.0)	2769.6 1507.2	0.9880 100.9 103.4	1.9202 [2.0000]	96.0%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [1.0000]	N/A%			BS2,
13C3_PFBAA_IIS	(216.0 / 172.0) 152522	(3.42, N/A) (N/A, 0.05, N/A)	1713.0	N/A	1.2511 [1.0000]	125.1% {120.9%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 234217	(5.12, N/A) (N/A, 0.04, N/A)	1458.2	N/A	1.1548 [1.0000]	115.5% {117.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 377568	(6.40, N/A) (N/A, 0.02, N/A)	1646.9	N/A	1.1881 [1.0000]	118.8% {114.0%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (8)
 Acquired: 2023/04/14 - 16:00

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 375620	(7.02, N/A) (N/A, 0.02, N/A)	49365.8	N/A	1.2376 [1.0000]	123.8% { 117.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 354398	(7.59, N/A) (N/A, 0.02, N/A)	2738.8	N/A	1.0922 [1.0000]	109.2% { 107.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 535092	(6.48, N/A) (N/A, 0.02, N/A)	3629.0	N/A	1.1948 [1.0000]	119.5% { 109.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 902475	(7.76, N/A) (N/A, 0.02, N/A)	1715.1	N/A	1.3270 [1.0000]	132.7% { 127.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1255070	(3.42, N/A) (N/A, 0.05, N/A)	4817.5	N/A	7.7612 [8.0000]	97.0% { 115.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1036757	(4.32, N/A) (N/A, 0.06, N/A)	4046.4	N/A	3.9518 [4.0000]	98.8% { 120.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 646459	(5.12, N/A) (N/A, 0.04, N/A)	1913.5	N/A	1.9473 [2.0000]	97.4% { 110.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 608328	(5.77, N/A) (N/A, 0.02, N/A)	2536.0	N/A	2.0979 [2.0000]	104.9% { 111.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 743922	(6.40, N/A) (N/A, 0.02, N/A)	3633.8	N/A	1.9962 [2.0000]	99.8% { 112.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 342661	(7.02, N/A) (N/A, 0.02, N/A)	13282.6	N/A	0.9710 [1.0000]	97.1% { 107.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 391287	(7.60, N/A) (N/A, 0.02, N/A)	10377.2	N/A	0.9842 [1.0000]	98.4% { 111.3% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (8)
 Acquired: 2023/04/14 - 16:00

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 403486	(8.12, N/A) (N/A, 0.02, N/A)	3248.5	N/A	1.0933 [1.0000]	109.3% { 110.7% }			
13C2_PFDa_EIS	(615.0 / 570.0) 308929	(8.59, N/A) (N/A, 0.02, N/A)	1969.9	N/A	0.9776 [1.0000]	97.8% { 117.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 247940	(9.04, N/A) (N/A, 0.01, N/A)	2198.7	N/A	0.8321 [1.0000]	83.2% { 106.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1515878	(5.08, N/A) (N/A, 0.05, N/A)	3495.1	N/A	1.8044 [2.0000]	90.2% { 114.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 937949	(6.48, N/A) (N/A, 0.02, N/A)	1555.7	N/A	1.9017 [2.0000]	95.1% { 105.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1944048	(7.76, N/A) (N/A, 0.02, N/A)	2496.9	N/A	1.7781 [2.0000]	88.9% { 117.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 285525	(4.91, N/A) (N/A, 0.05, N/A)	924.7	N/A	3.7736 [4.0000]	94.3% { 119.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 340322	(6.16, N/A) (N/A, 0.02, N/A)	1229.4	N/A	3.9408 [4.0000]	98.5% { 117.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 426856	(7.35, N/A) (N/A, 0.02, N/A)	1688.8	N/A	3.7336 [4.0000]	93.3% { 114.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2535744	(9.73, N/A) (N/A, 0.01, N/A)	3156.8	N/A	1.4286 [2.0000]	71.4% { 103.6% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 277936	(10.37, N/A) (N/A, 0.00, N/A)	1635.8	N/A	0.7338 [2.0000]	36.7% { 44.3% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (8)
 Acquired: 2023/04/14 - 16:00

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 242211	(10.55 , N/A) (N/A , 0.00 , N/A)	1588.7	N/A	0.7751 [2.0000]	38.8% { 43.3% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 715469	(7.73 , N/A) (N/A , 0.02 , N/A)	1818.8	N/A	3.0531 [4.0000]	76.3% { 109.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 556084	(7.98 , N/A) (N/A , 0.02 , N/A)	20366.8	N/A	2.8931 [4.0000]	72.3% { 100.3% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1115210	(10.31 , N/A) (N/A , 0.00 , N/A)	978.5	N/A	8.8691 [20.0000]	44.3% { 51.3% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2626493	(10.48 , N/A) (N/A , 0.00 , N/A)	1684.4	N/A	15.8039 [20.0000]	79.0% { 89.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1360979	(5.37 , N/A) (N/A , 0.02 , N/A)	3264.4	N/A	7.2669 [8.0000]	90.8% { 112.2% }			

ANALYSIS DATA SHEET**MRL Check**

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-MRL1
Sampled:		File ID:	S2023-04-14A (9)
Solids:		Prepared:	04/10/23 08:18
Batch:	BCD0119	Analyzed:	04/14/23 16:12
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2315014
		Instrument:	Saphira
		Sequence:	SC01502

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	1.42	1.6	0.21	J
PFPEA	0.746	0.80	0.065	J
PFHXA	0.462	0.40	0.055	
PFHPA	0.483	0.40	0.041	IR2
PFOA	0.523	0.40	0.15	
PFNA	0.440	0.40	0.082	
PFDA	0.477	0.40	0.10	IR1
PFUnA	0.306	0.40	0.16	J
PFDOA	0.412	0.40	0.11	
PFTRDA	0.365	0.40	0.20	J
PFTEDA	0.406	0.40	0.20	
PFBS	0.309	0.40	0.037	J
PFPEs	0.330	0.40	0.063	J
PFHXS	0.384	0.40	0.032	J
PFHPS	0.353	0.40	0.051	J
PFOS	0.450	0.40	0.064	MI2
PFNS	0.340	0.40	0.12	J
PFDS	0.324	0.40	0.15	J
PFDOS	0.282	0.40	0.12	J
4:2FTS	1.36	1.6	0.29	J
6:2FTS	2.39	1.6	0.31	
8:2FTS	1.41	1.6	0.082	J
PFOSA	0.498	0.40	0.10	
NMeFOSA	1.53	1.6	0.47	J
NEtFOSA	1.40	1.6	0.41	J
NMeFOSAA	0.322	0.40	0.11	J
NEtFOSAA	0.348	0.40	0.11	J
NMeFOSE	1.42	1.6	1.0	J
NEtFOSE	1.34	1.6	1.0	J
HFPO-DA	0.742	0.80	0.17	J

ANALYSIS DATA SHEET**MRL Check**

Laboratory:	APPL, LLC	Work Order:	23C0239
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0119-MRL1
Sampled:		File ID:	S2023-04-14A (9)
Solids:		Prepared:	04/10/23 08:18
Batch:	BCD0119	Analyzed:	04/14/23 16:12
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2315014
		Instrument:	Saphira
		Sequence:	SC01502

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	0.761	0.80	0.12	J
PFEESA	0.581	0.80	0.11	J
PFMPA	0.802	0.80	0.054	
PFMBA	0.860	0.80	0.091	
NFDHA	0.650	0.80	0.30	J
9CL-PF3ONS	0.615	0.80	0.21	J
11CL-PF3OUDS	0.703	0.80	0.21	J
3:3FTCA	1.39	1.6	0.57	J
5:3FTCA	1.63	1.6	0.44	
7:3FTCA	1.61	1.6	0.55	

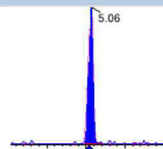
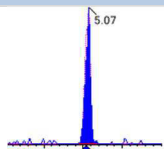
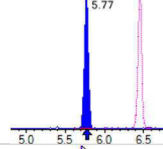
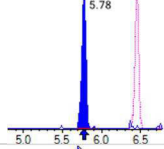
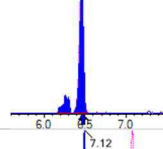
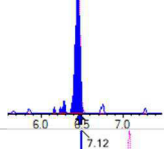
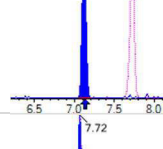
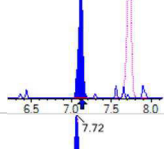
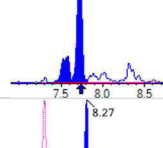
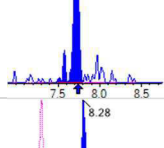
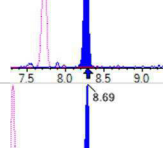
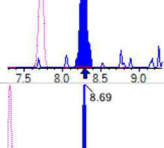
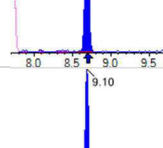
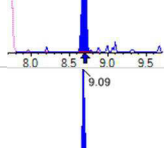
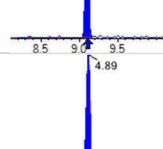
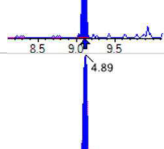
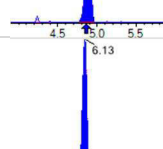
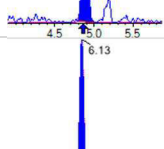
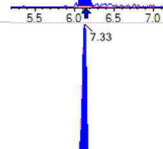
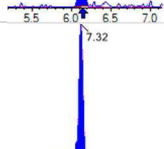
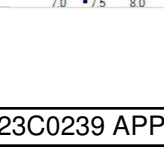
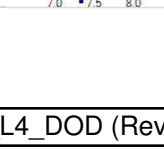


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-MRL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (9)
 Acquired: 2023/04/14 - 16:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 53111	(3.41, 1.00) (0.00, N/A, 0.0)	97.4	N/A 0.0 0.0	0.3547 [0.4000]	88.7%			
PFPeA	(263.0 / 219.0) 47940 (263.0 / 69.0) 1342	(4.31, 1.00) (0.00, N/A, -0.5)	28.5 49.6	0.0280 213.2 239.1	0.1865 [0.2000]	93.3%			
PFHxA	(313.0 / 269.0) 37714 (313.0 / 119.0) 4904	(5.11, 1.00) (0.00, N/A, -0.8)	16.6 191.3	0.1300 119.2 133.5	0.1155 [0.1000]	115.5%			
PFHpA	(363.0 / 319.0) 31699 (363.0 / 169.0) 16698	(5.76, 1.00) (0.00, N/A, 0.3)	126.6 46721.9	0.5268 172.5 169.2	0.1207 [0.1000]	120.7%			IR2,
PFOA	(413.0 / 369.0) 45216 (413.0 / 169.0) 14310	(6.37, 1.00) (0.00, N/A, 0.1)	15.7 12.7	0.3165 101.1 101.1	0.1308 [0.1000]	130.8%			
PFNA	(463.0 / 419.0) 32752 (463.0 / 169.0) 5697	(6.99, 1.00) (0.00, N/A, 0.1)	1568.7 304637.0	0.1740 81.5 84.4	0.1100 [0.1000]	110.0%			
PFDA	(513.0 / 469.0) 44033 (513.0 / 169.0) 2182	(7.56, 1.00) (0.00, N/A, 1.3)	109.7 256404.1	0.0495 43.2 44.4	0.1193 [0.1000]	119.3%			IR1,
PFUnA	(563.0 / 519.0) 26500 (563.0 / 169.0) 2936	(8.08, 1.00) (0.00, N/A, -0.7)	105.8 1597.9	0.1108 93.7 97.3	0.0766 [0.1000]	76.6%			
PFDoA	(613.0 / 569.0) 31326 (613.0 / 169.0) 3638	(8.56, 1.00) (0.01, N/A, 0.0)	251.5 126.1	0.1161 67.8 78.6	0.1029 [0.1000]	102.9%			
PFTTrDA	(663.0 / 619.0) 25319 (663.0 / 169.0) 6774	(8.83, 1.03) (N/A, -0.01, -0.2)	187.1 432.1	0.2675 108.0 102.9	0.0913 [0.1000]	91.3%			
PFTeDA	(713.0 / 669.0) 27058 (713.0 / 169.0) 4473	(9.02, 1.00) (0.00, N/A, 0.6)	219.2 85.8	0.1653 82.0 83.1	0.1015 [0.1000]	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	(299.0 / 80.0) 40899 (299.0 / 99.0) 32092	(5.06, 1.00) (0.00, N/A, -0.2)	739.2 546.9	0.7846 122.0 118.4	0.0773 [0.0885]	87.4%			
PFPeS	(349.0 / 80.0) 77667 (349.0 / 99.0) 25697	(5.77, 0.89) (N/A, 0.00, -0.5)	227423.6 9208.0	0.3309 97.6 95.2	0.0825 [0.0938]	87.9%			
PFHxS	(399.0 / 80.0) 77089 (399.0 / 99.0) 25203	(6.46, 1.00) (0.00, N/A, 0.6)	93078.4 60991.1	0.3269 94.4 94.8	0.0961 [0.0911]	105.5%			
PFHpS	(449.0 / 80.0) 68722 (449.0 / 99.0) 14636	(7.12, 0.92) (N/A, -0.01, 0.1)	879.7 1102.7	0.2130 76.8 76.9	0.0883 [0.0951]	92.8%			
PFOS	(499.0 / 80.0) 122916 (499.0 / 99.0) 22173	(7.72, 1.00) (0.00, N/A, 0.1)	177.5 214.7	0.1804 80.6 78.3	0.1125 [0.0927]	121.3%			M12 ABK 4/16/23
PFNS	(549.0 / 80.0) 86745 (549.0 / 99.0) 19222	(8.27, 1.07) (N/A, -0.01, -0.3)	1666.1 767519.8	0.2216 91.6 91.3	0.0849 [0.0960]	88.5%			
PFDS	(599.0 / 80.0) 93464 (599.0 / 99.0) 21953	(8.69, 1.13) (N/A, -0.01, -0.1)	566.9 9740.4	0.2349 104.8 104.9	0.0810 [0.0963]	84.1%			
PFDoS	(699.0 / 80.0) 62500 (699.0 / 99.0) 16882	(9.10, 1.18) (N/A, -0.01, 0.4)	344.8 204.3	0.2701 112.9 125.3	0.0704 [0.0970]	72.6%			
4:2FTS	(327.0 / 307.0) 78774 (327.0 / 81.0) 40922	(4.89, 1.00) (0.00, N/A, 0.0)	829.1 96.6	0.5195 76.4 84.2	0.3410 [0.3738]	91.2%			
6:2FTS	(427.0 / 407.0) 95113 (427.0 / 81.0) 77511	(6.13, 1.00) (-0.01, N/A, 0.0)	197.0 186.7	0.8149 115.7 112.9	0.5965 [0.3796]	157.1%			
8:2FTS	(527.0 / 507.0) 51314 (527.0 / 81.0) 41311	(7.33, 1.00) (0.00, N/A, 0.5)	7485.1 217.8	0.8051 119.1 106.7	0.3534 [0.3833]	92.2%			

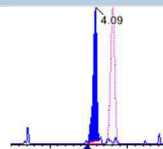
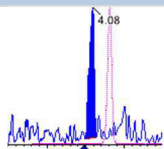
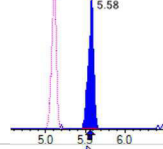
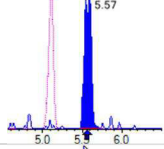
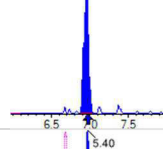
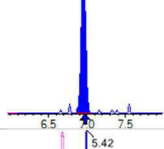
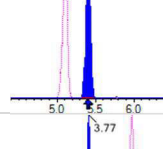
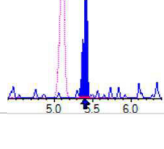
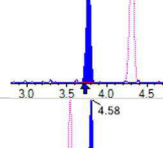
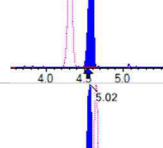
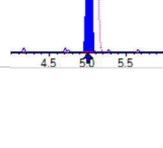
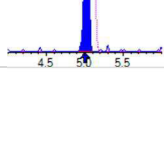
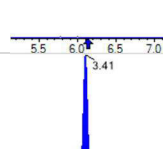
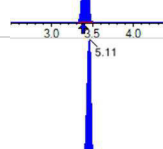
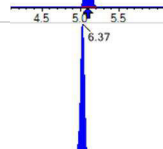


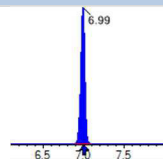
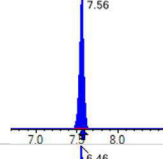
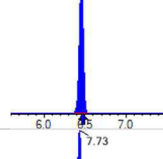
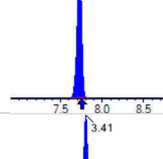
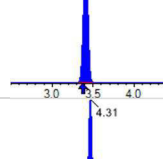
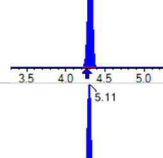
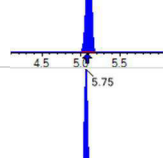
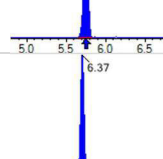
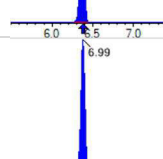
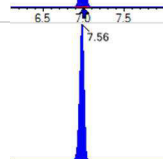
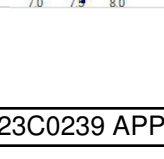
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-MRL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (9)
 Acquired: 2023/04/14 - 16:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 140629 (498.0 / 478.0) 3718	(9.71, 1.00) (0.00, N/A, 0.3)	643.8 46.8	0.0264 106.8 119.1	0.1246 [0.1000]	124.6%			
NMeFOSA	(512.0 / 219.0) 40575 (512.0 / 169.0) 33134	(10.36, 1.00) (0.00, N/A, 1.2)	524.7 279.7	0.8166 94.1 96.7	0.3828 [0.4000]	95.7%			
NEtFOSA	(526.0 / 219.0) 40120 (526.0 / 169.0) 49490	(10.53, 1.00) (-0.01, N/A, 0.7)	324.9 304.8	1.2336 98.7 99.0	0.3509 [0.4000]	87.7%			
NMeFOSAA	(570.0 / 419.0) 12995 (570.0 / 483.0) 6067	(7.70, 1.00) (0.00, N/A, 6.2)	628080.7 2025.0	0.4669 100.8 87.6	0.0804 [0.1000]	80.4%			
NEtFOSAA	(584.0 / 419.0) 11115 (584.0 / 526.0) 6067	(7.95, 1.00) (0.01, N/A, 0.3)	4977.1 2174.0	0.5458 89.4 95.2	0.0869 [0.1000]	86.9%			
NMeFOSE	(616.0 / 59.0) 30914	(10.31, 1.00) (0.01, N/A, 0.0)	95.9	N/A 0.0 0.0	0.3540 [0.4000]	88.5%			
NEtFOSE	(630.0 / 59.0) 40643	(10.49, 1.00) (0.01, N/A, 0.0)	114.3	N/A 0.0 0.0	0.3359 [0.4000]	84.0%			
HFPO-DA	(285.0 / 169.0) 28770 (285.0 / 185.0) 76765	(5.36, 1.00) (0.00, N/A, 0.3)	410.1 220.1	2.6683 102.6 102.6	0.1856 [0.2000]	92.8%			
ADONA	(377.0 / 85.0) 105331 (377.0 / 251.0) 9290	(5.98, 1.12) (N/A, -0.01, 0.0)	655.6 724.1	0.0882 88.9 86.8	0.1902 [0.1885]	100.9%			
9CI-Pf3ONS	(531.0 / 351.0) 256169 (533.0 / 353.0) 86736	(8.14, 1.52) (N/A, -0.02, 0.1)	899.0 288.6	0.3386 116.6 103.9	0.1536 [0.1867]	82.3%			
11CI-PF3OUDS	(631.0 / 451.0) 173228 (633.0 / 453.0) 56702	(8.88, 1.66) (N/A, -0.01, 0.1)	1388.3 595.2	0.3273 97.7 96.7	0.1758 [0.1886]	93.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 3269 (241.0 / 117.0) 4780	(4.09, 0.95) (N/A, 0.10, 0.1)	21.1 10.9	1.4623 88.6 90.6	0.3471 [0.4000]	86.8%			
5:3FTCA	(341.0 / 236.7) 20859 (341.0 / 217.0) 36453	(5.58, 1.09) (N/A, 0.02, 0.3)	1647.7 123.5	1.7476 111.4 105.8	0.4065 [0.4000]	101.6%			
7:3FTCA	(441.0 / 317.0) 36206 (441.0 / 337.0) 25224	(6.95, 1.36) (N/A, -0.02, 0.0)	224.7 315.3	0.6967 80.9 82.3	0.4029 [0.4000]	100.7%			
PFEESA	(315.0 / 135.0) 59626 (315.0 / 83.0) 16969	(5.40, 1.06) (N/A, 0.01, -0.8)	308.1 88.0	0.2846 116.6 117.4	0.1452 [0.1785]	81.3%			
PFMPA	(229.0 / 85.0) 10968	(3.77, 0.87) (N/A, 0.05, 0.0)	466.0	N/A 0.0 0.0	0.2004 [0.2000]	100.2%			
PFMBA	(279.0 / 85.0) 43108	(4.58, 1.06) (N/A, 0.05, 0.0)	981.0	N/A 0.0 0.0	0.2151 [0.2000]	107.6%			
NFDHA	(295.0 / 201.0) 27117 (295.0 / 85.0) 28540	(5.02, 0.98) (N/A, 0.02, 0.0)	1758.5 279.1	1.0525 107.5 110.2	0.1625 [0.2000]	81.2%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [0.1000]	N/A%			BS2,
13C3_PFBA_IIS	(216.0 / 172.0) 162943	(3.41, N/A) (N/A, 0.04, N/A)	1582.1	N/A	1.3366 [1.0000]	133.7% {129.1%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 241922	(5.11, N/A) (N/A, 0.02, N/A)	8919.8	N/A	1.1928 [1.0000]	119.3% {121.1%}			
13C4_PFOA_IIS	(417.0 / 372.0) 395006	(6.37, N/A) (N/A, -0.01, N/A)	5882.3	N/A	1.2430 [1.0000]	124.3% {119.3%}			

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
13C5_PFNA_IIS	(468.0 / 423.0) 397437	(6.99, N/A) (N/A, -0.01, N/A)	2949.5	N/A	1.3095 [1.0000]	131.0% { 123.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 387011	(7.56, N/A) (N/A, -0.02, N/A)	2903.6	N/A	1.1927 [1.0000]	119.3% { 117.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 579629	(6.46, N/A) (N/A, -0.01, N/A)	4302.6	N/A	1.2942 [1.0000]	129.4% { 118.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 900376	(7.73, N/A) (N/A, -0.02, N/A)	1353.8	N/A	1.3239 [1.0000]	132.4% { 126.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1370829	(3.41, N/A) (N/A, 0.04, N/A)	5397.9	N/A	7.9349 [8.0000]	99.2% { 126.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1069694	(4.31, N/A) (N/A, 0.05, N/A)	4390.4	N/A	3.9475 [4.0000]	98.7% { 124.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 676865	(5.11, N/A) (N/A, 0.02, N/A)	1582.4	N/A	1.9739 [2.0000]	98.7% { 115.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 609287	(5.75, N/A) (N/A, 0.00, N/A)	1584.0	N/A	2.0343 [2.0000]	101.7% { 111.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 733144	(6.37, N/A) (N/A, -0.01, N/A)	5404.0	N/A	1.8805 [2.0000]	94.0% { 111.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 322889	(6.99, N/A) (N/A, -0.01, N/A)	3404.5	N/A	0.8647 [1.0000]	86.5% { 101.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 392527	(7.56, N/A) (N/A, -0.01, N/A)	272665.1	N/A	0.9041 [1.0000]	90.4% { 111.7% }			

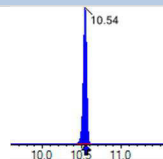
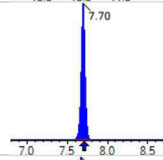
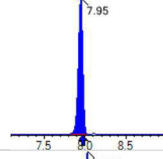
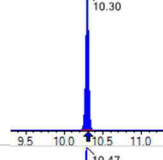
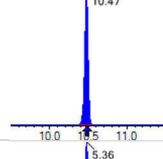
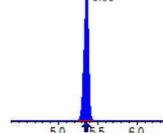


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCD0119-MRL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-12A
 Path: S2023-04-14A (9)
 Acquired: 2023/04/14 - 16:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 393081	(8.09, N/A) (N/A, -0.01, N/A)	2558927.9	N/A	0.9753 [1.0000]	97.5% { 107.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 335662	(8.55, N/A) (N/A, -0.01, N/A)	1510.6	N/A	0.9727 [1.0000]	97.3% { 127.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 290989	(9.02, N/A) (N/A, -0.01, N/A)	1516.0	N/A	0.8943 [1.0000]	89.4% { 124.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1483432	(5.06, N/A) (N/A, 0.03, N/A)	2550.6	N/A	1.6301 [2.0000]	81.5% { 112.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1020587	(6.45, N/A) (N/A, -0.01, N/A)	2379.2	N/A	1.9102 [2.0000]	95.5% { 114.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1931334	(7.72, N/A) (N/A, -0.02, N/A)	2408.9	N/A	1.7705 [2.0000]	88.5% { 116.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 311185	(4.89, N/A) (N/A, 0.03, N/A)	846.9	N/A	3.7967 [4.0000]	94.9% { 130.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 372723	(6.14, N/A) (N/A, -0.01, N/A)	1688.1	N/A	3.9844 [4.0000]	99.6% { 129.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 411630	(7.32, N/A) (N/A, -0.01, N/A)	2491.6	N/A	3.3238 [4.0000]	83.1% { 110.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2576585	(9.71, N/A) (N/A, -0.01, N/A)	3422.7	N/A	1.4550 [2.0000]	72.8% { 105.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 255470	(10.36, N/A) (N/A, -0.01, N/A)	1491.8	N/A	0.6761 [2.0000]	33.8% { 40.8% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 217685	(10.54, N/A) (N/A, 0.00, N/A)	1807.5	N/A	0.6982 [2.0000]	34.9% { 38.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 760304	(7.70, N/A) (N/A, -0.02, N/A)	3365.8	N/A	3.2520 [4.0000]	81.3% { 116.7% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 578488	(7.95, N/A) (N/A, -0.02, N/A)	12731.7	N/A	3.0167 [4.0000]	75.4% { 104.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1599570	(10.30, N/A) (N/A, -0.01, N/A)	1220.3	N/A	12.7507 [20.0000]	63.8% { 73.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2456980	(10.47, N/A) (N/A, -0.01, N/A)	1627.5	N/A	14.8184 [20.0000]	74.1% { 83.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1468420	(5.36, N/A) (N/A, 0.01, N/A)	2397.6	N/A	7.5909 [8.0000]	94.9% { 121.1% }			

PREPARATION BENCH SHEET

Organics

BCD0119

Print Date/Time: 04/17/2023 10:08 am

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses		Spiking Solution(s)			Surrogate Solution(s)				
1633		23C0549	PFAS - MIX 1633 10ng/mL	23C0277	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
23C0239-01RE2	AF-RHMW17-WGN01LF-2303W3	04/04/2023	04/21/2023	4/10/2023 8:18:00AM	560.73	2		200	Re-extract added 4/6/2023 by HGH
23C0239-01RE3	AF-RHMW17-WGN01LF-2303W3	04/04/2023	04/21/2023	4/10/2023 8:18:00AM	560.73	2		200	Re-extract added 4/6/2023 by HGH
23C0239-02RE2	AF-RHMW17D-WGN01LF-2303W3	04/04/2023	04/21/2023	4/10/2023 8:18:00AM	533.62	2		200	Re-extract added 4/6/2023 by HGH
23C0239-02RE3	AF-RHMW17D-WGN01LF-2303W3	04/04/2023	04/21/2023	4/10/2023 8:18:00AM	533.62	2		200	Re-extract added 4/6/2023 by HGH
23C0239-03RE2	AF-RHMW17D-WQFB01-2303W3	04/04/2023	04/21/2023	4/10/2023 8:18:00AM	581.54	2		200	Re-extract added 4/6/2023 by HGH
23C0239-03RE3	AF-RHMW17D-WQFB01-2303W3	04/04/2023	04/21/2023	4/10/2023 8:18:00AM	581.54	2		200	Re-extract added 4/6/2023 by HGH
23C0253-01	WP013P-EB-SOIL-01	04/12/2023	04/24/2023	4/10/2023 8:18:00AM	520.59	2		200	
23C0253-01RE1	WP013P-EB-SOIL-01	04/12/2023	04/24/2023	4/10/2023 8:18:00AM	520.59	2		200	Added 4/14/2023 by DAG
23C0253-02	WP013P-EB-SOIL-02	04/12/2023	04/24/2023	4/10/2023 8:18:00AM	530.05	2		200	
23C0253-02RE1	WP013P-EB-SOIL-02	04/12/2023	04/24/2023	4/10/2023 8:18:00AM	530.05	2		200	Added 4/14/2023 by DAG
23C0279-01	WP013P-VAS-002-24	04/14/2023	04/26/2023	4/10/2023 8:18:00AM	522.45	2		200	11mL of soil left
23C0279-01RE1	WP013P-VAS-002-24	04/14/2023	04/26/2023	4/10/2023 8:18:00AM	522.45	2		200	11mL of soil left
23C0279-02	WP013P-FRB-VAS-01	04/14/2023	04/26/2023	4/10/2023 8:18:00AM	541.36	2		200	
23C0279-02RE1	WP013P-FRB-VAS-01	04/14/2023	04/26/2023	4/10/2023 8:18:00AM	541.36	2		200	Added 4/14/2023 by DAG
23C0279-03	WP013P-VAS-001-12	04/14/2023	04/27/2023	4/10/2023 8:18:00AM	517.8	2		200	<2.5 mL of soil left
23C0279-03RE1	WP013P-VAS-001-12	04/14/2023	04/27/2023	4/10/2023 8:18:00AM	517.8	2		200	<2.5 mL of soil left
23C0279-04	WP013P-VAS-002-12	04/14/2023	04/27/2023	4/10/2023 8:18:00AM	493.52	2		200	
23C0279-04RE1	WP013P-VAS-002-12	04/14/2023	04/27/2023	4/10/2023 8:18:00AM	493.52	2		200	Added 4/14/2023 by DAG
23D0021-02	IDW-DRUM-02	04/18/2023	05/01/2023	4/10/2023 8:18:00AM	528.65	2		200	7mL of soil left
23D0021-02RE1	IDW-DRUM-02	04/18/2023	05/01/2023	4/10/2023 8:18:00AM	528.65	2		200	7mL of soil left
23D0043-01	AF-RHMW225401-WGN01B-2304	04/13/2023	05/03/2023	4/10/2023 8:18:00AM	543.66	2		200	"Report relevant surrogates"
	WI								

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

PREPARATION BENCH SHEET

Organics

BCD0119

(Continued)

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses		Spiking Solution(s)		Surrogate Solution(s)	
1633	PFAS - MIX 1633 10ng/mL	23C0549	PFAS - MIX 1633 10ng/mL	23C0277	MPFAC-HIF-ES 20.0ng/mL
23D0043-01RE1	AF-RHMW225401-WGN01B-2304 W1	05/03/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0043-02	AF-HDMW225303-WGN01LF-230 4W1	05/02/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0043-02RE1	AF-HDMW225303-WGN01LF-230 4W1	05/02/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0043-03	AF-RHMW10-WGN01LF-2304W1	05/02/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0043-03RE1	AF-RHMW10-WGN01LF-2304W1	05/02/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0043-04	AF-RHMW10-WGFD01LF-2304W1	05/02/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0043-04RE1	AF-RHMW10-WGFD01LF-2304W1	05/02/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0053-03	Central Final	04/11/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0053-03RE1	Central Final	04/11/2023	4/10/2023 8:18:00AM	200	Added 4/14/2023 by DAG
23D0056-01	AF-RHMW03-WGN01LF-2304W1	05/04/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0056-01RE1	AF-RHMW03-WGN01LF-2304W1	05/04/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0056-02	AF-RHMW02-WGN01LF-2304W1	05/04/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0056-02RE1	AF-RHMW02-WGN01LF-2304W1	05/04/2023	4/10/2023 8:18:00AM	200	"Report relevant surrogates"
23D0060-02	WC Res Bkgd #2	04/12/2023	4/10/2023 8:18:00AM	200	Added 4/14/2023 by DAG
23D0060-02RE1	WC Res Bkgd #2	04/12/2023	4/10/2023 8:18:00AM	200	used two cartridges
23D0060-10	AlSCO	04/13/2023	4/10/2023 8:18:00AM	200	Added 4/14/2023 by DAG
23D0060-10RE1	AlSCO	04/13/2023	4/10/2023 8:18:00AM	200	Added 4/14/2023 by DAG
BCD0119-BLK1	Blank		4/10/2023 8:18:00AM	0	
BCD0119-BS1	LCS		4/10/2023 8:18:00AM	200	
BCD0119-MRL1	MRL Check		4/10/2023 8:18:00AM	20	
BCD0119-MS1	Matrix Spike [23C0279-01]		4/10/2023 8:18:00AM	200	6.5mL soil left
BCD0119-MSD1	Matrix Spike Dup [23C0279-01]		4/10/2023 8:18:00AM	200	33mL soil left

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

PREPARATION BENCH SHEET

Organics

BCD0119

(Continued)

Print Date/Time: 04/17/2023 10:08 am

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses
1633

Spiking Solution(s)
23C0549 PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)
23C0277 MPFAC-HIF-ES 20.0ng/mL

Start Date/Time _____
Stop Date/Time _____

Standard	Description	LotNum
22C0296	Envi-carb	122395
23B0607	Am. Ac. preservative	*
23C0006	Reagent - 0.05MFA wash	X
23D0065	Reagent - 0.3M Formic Acid	M13H051
23D0244	Reagent - 1.0% Ammonia Hydroxide	219481

Batch Comments:

Spiked by: LYA 4/10/23 11:00AM

Witness: PAF

Balance #: EB2

Cartridge: aligent

Concentration: 4/13/23 9:31-11:30

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

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INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Sequence:	SC01442	Instrument:	Saphira
Calibration:	2315014		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SC01442-CAL1	S2023-04-12A (1)	04/12/23 10:12
Cal Standard	SC01442-CAL2	S2023-04-12A (2)	04/12/23 10:25
Cal Standard	SC01442-CAL3	S2023-04-12A (3)	04/12/23 10:38
Cal Standard	SC01442-CAL4	S2023-04-12A (4)	04/12/23 10:51
Cal Standard	SC01442-CAL5	S2023-04-12A (5)	04/12/23 11:04
Cal Standard	SC01442-CAL6	S2023-04-12A (6)	04/12/23 11:16
Cal Standard	SC01442-CAL7	S2023-04-12A (7)	04/12/23 11:29
Cal Standard	SC01442-CAL8	S2023-04-12A (8)	04/12/23 11:42
Initial Cal Blank	SC01442-ICB1	S2023-04-12A (9)	04/12/23 11:55
Secondary Cal Check	SC01442-SCV1	S2023-04-12A (10)	04/12/23 12:08

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Sequence:	SC01502	Instrument:	Saphira
Calibration:	2315014		

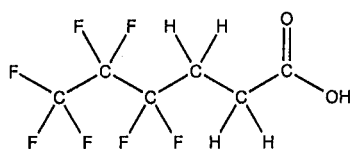
Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SC01502-CCB1	S2023-04-14A (1)	04/14/23 14:29
Low Cal Check	SC01502-LCV1	S2023-04-14A (2)	04/14/23 14:42
Calibration Check	SC01502-CCV1	S2023-04-14A (3)	04/14/23 14:55
Performance Mix	SC01502-PEM1	S2023-04-14A (4)	04/14/23 15:08
Performance Mix	SC01502-PEM2	S2023-04-14A (5)	04/14/23 15:21
Calibration Blank	SC01502-CCB2	S2023-04-14A (6)	04/14/23 15:34
Blank	BCD0119-BLK1	S2023-04-14A (7)	04/14/23 15:47
LCS	BCD0119-BS1	S2023-04-14A (8)	04/14/23 16:00
MRL Check	BCD0119-MRL1	S2023-04-14A (9)	04/14/23 16:12
AF-RHMW17-WGN01LF-2303W3	23C0239-01RE2	S2023-04-14A (12)	04/14/23 16:51
AF-RHMW17D-WGN01LF-2303W3	23C0239-02RE2	S2023-04-14A (14)	04/14/23 17:17
AF-RHMW17D-WGN01LF-2303W3	23C0239-02RE3	S2023-04-14A (15)	04/14/23 17:30
AF-RHMW17D-WQFB01-2303W3	23C0239-03RE2	S2023-04-14A (16)	04/14/23 17:43
Calibration Check	SC01502-CCV2	S2023-04-14A (32)	04/14/23 21:09
Calibration Blank	SC01502-CCB3	S2023-04-14A (33)	04/14/23 21:22
Calibration Check	SC01502-CCV3	S2023-04-14A (52)	04/15/23 01:26
Calibration Blank	SC01502-CCB4	S2023-04-14A (53)	04/15/23 01:39



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

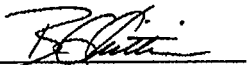
DOCUMENTATION/ DATA ATTACHED:

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

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:

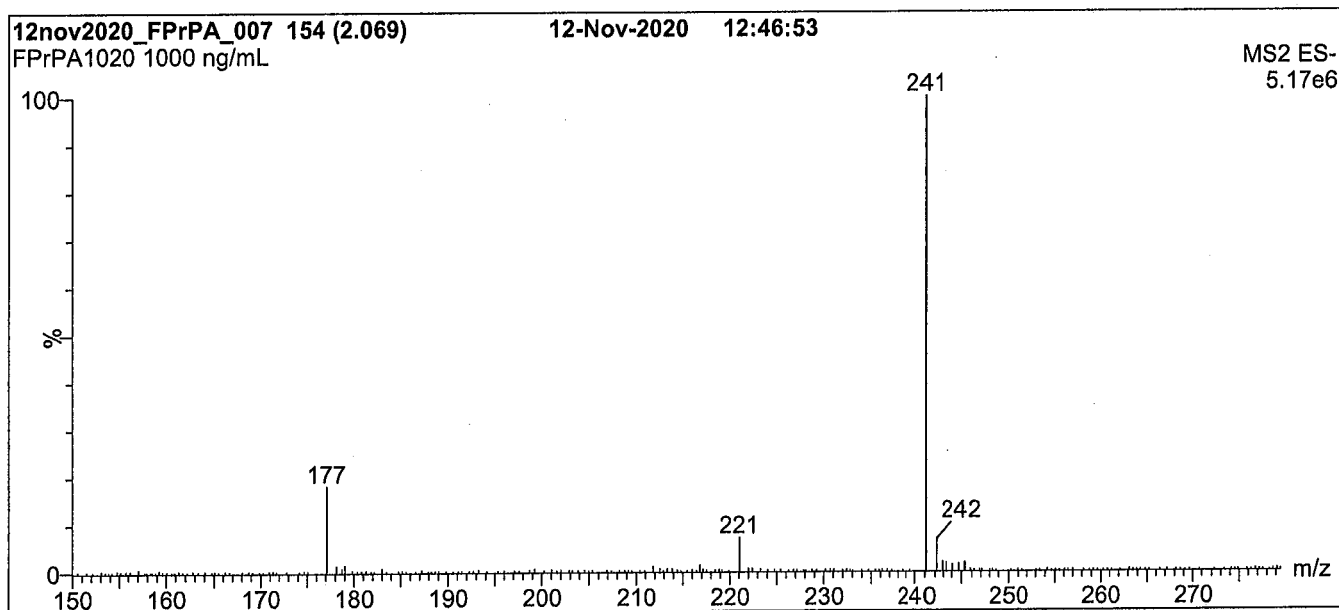
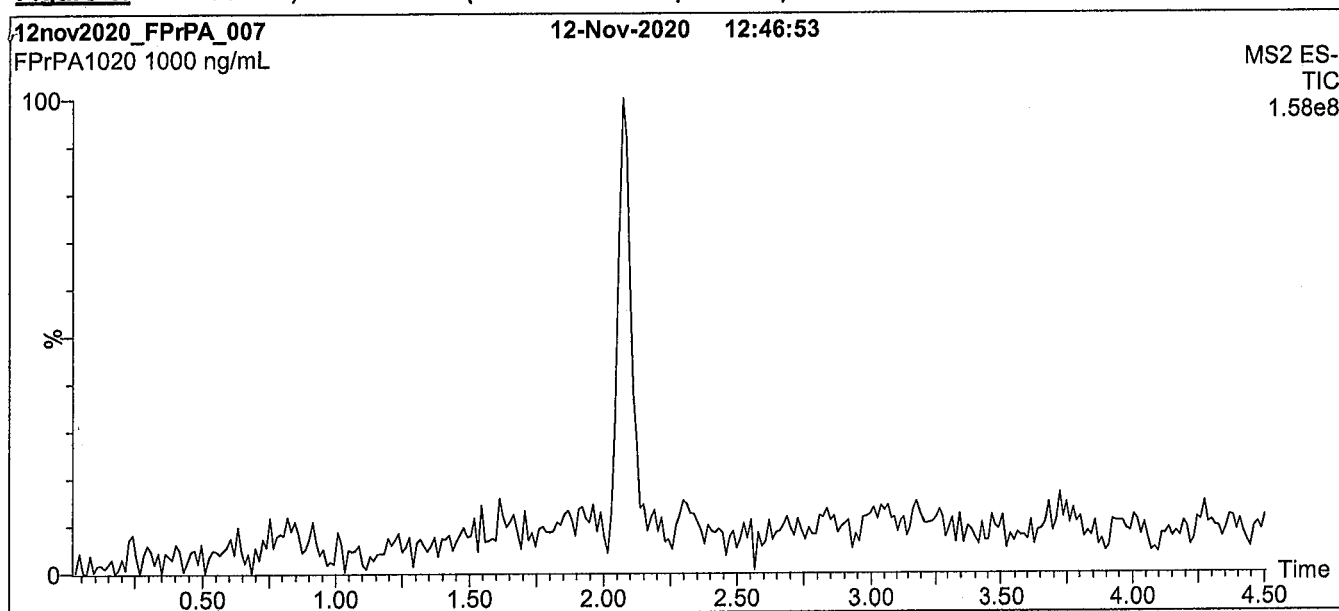
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

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

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

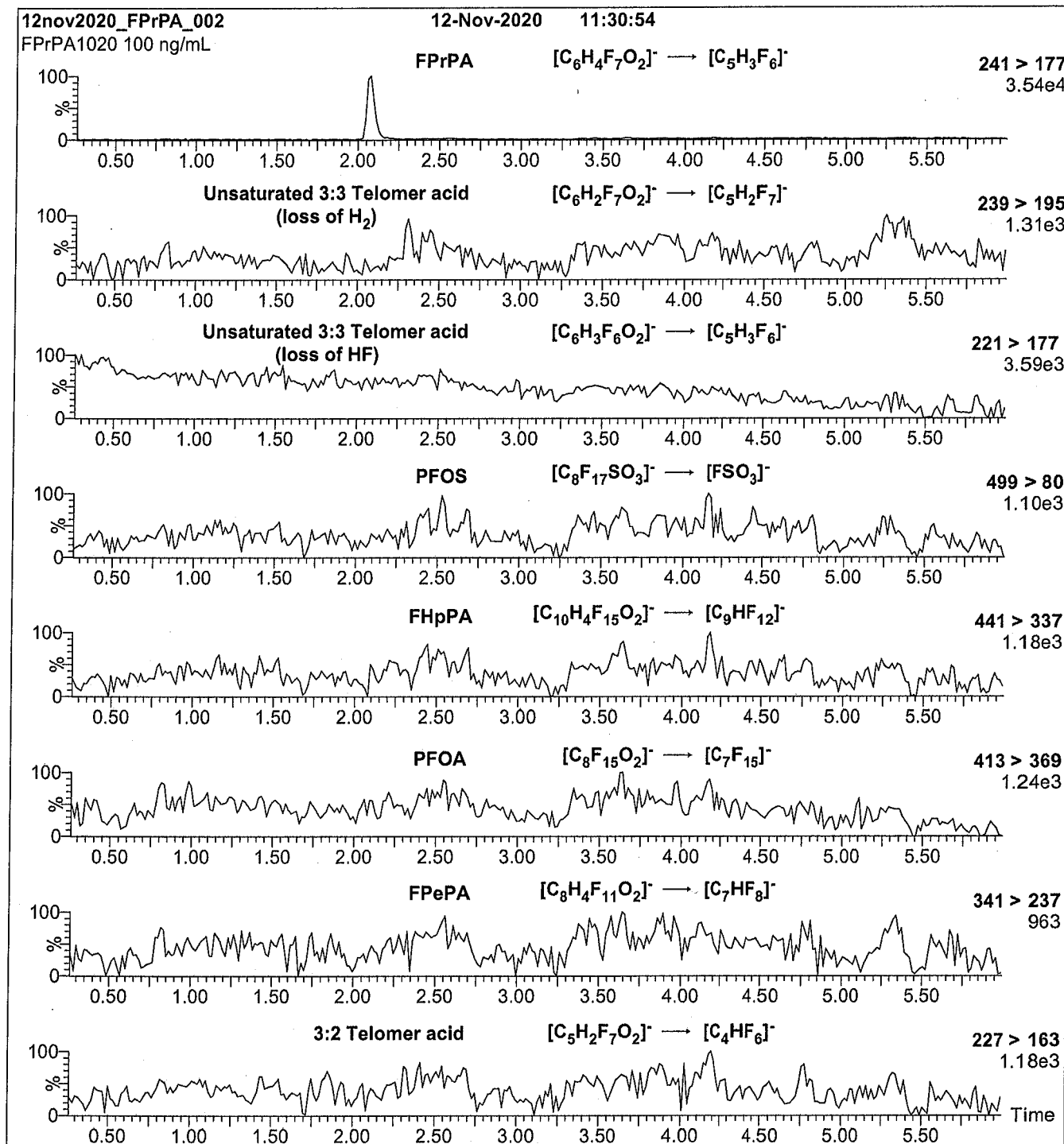
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 18.50

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

Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 10

Analytical Standard Record

21L0004

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

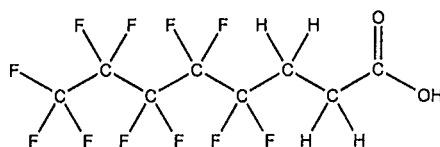
Analyte	Parent	CAS Number	Concentration	Units
3:3 FTA		113507-82-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA **LOT NUMBER:** FPePA1120
COMPOUND: 3-Perfluoropentyl propanoic acid
STRUCTURE: **CAS #:** 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$ **MOLECULAR WEIGHT:** 342.11
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 11/27/2020
 (mm/dd/yyyy)

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

INTENDED USE:

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HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

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

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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:

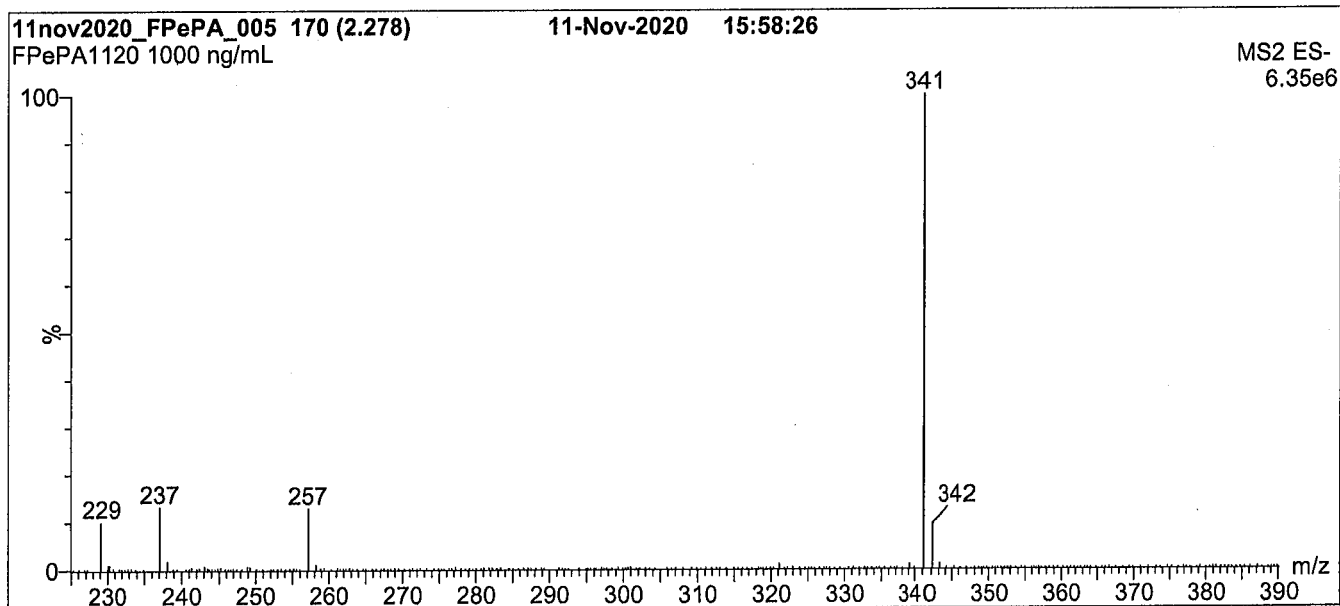
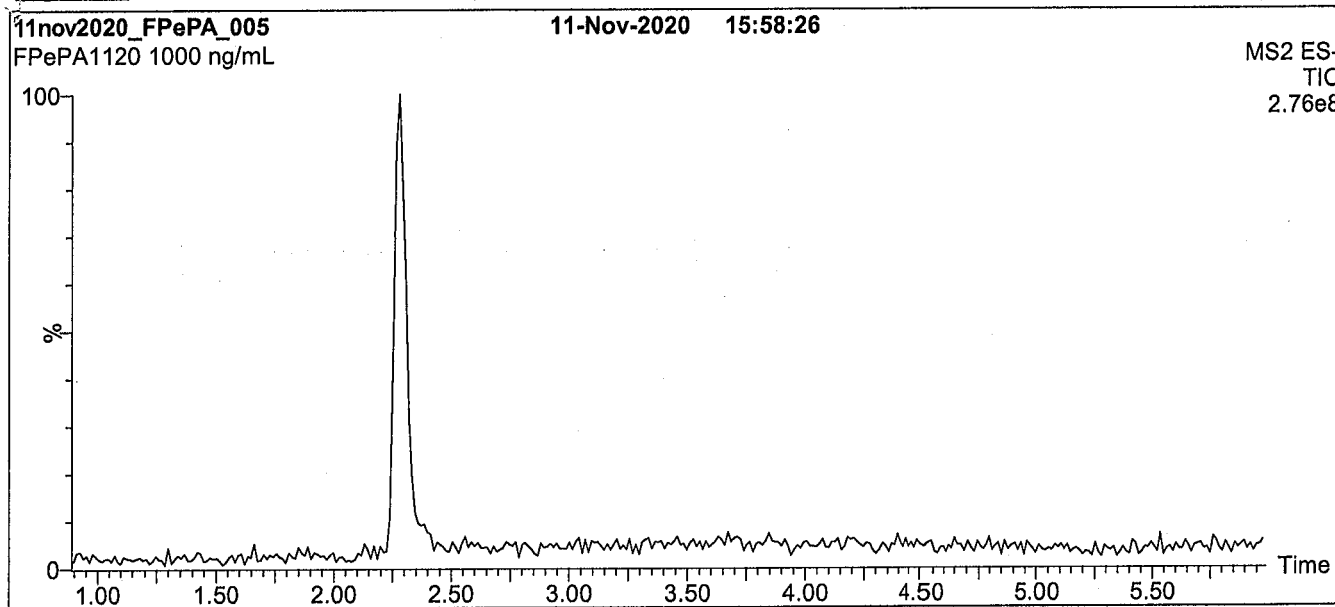
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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

Figure 1: 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

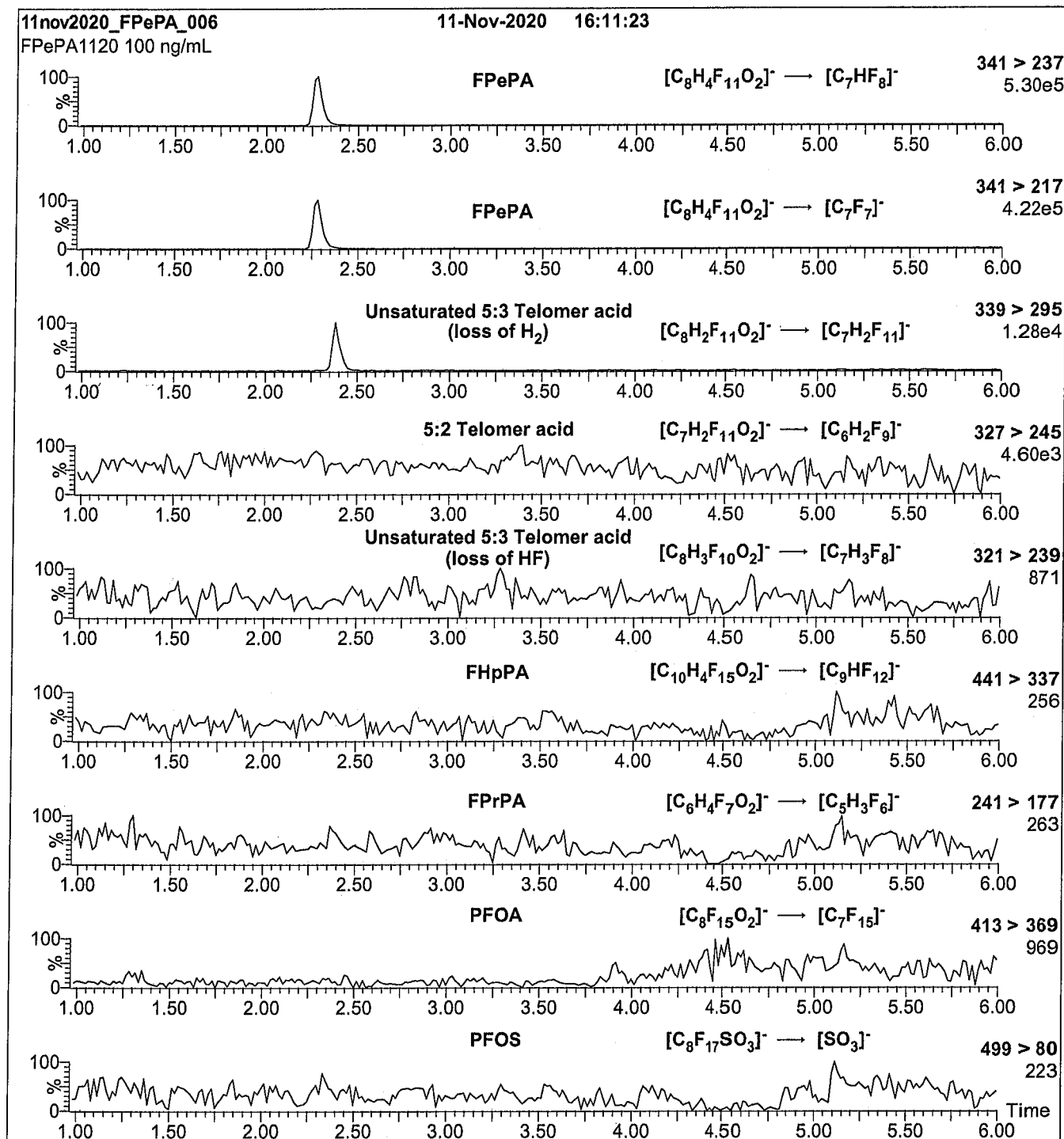
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

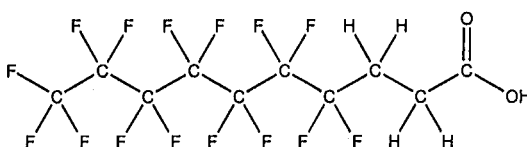


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

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



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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 11/27/2020
 (mm/dd/yyyy)

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

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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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.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

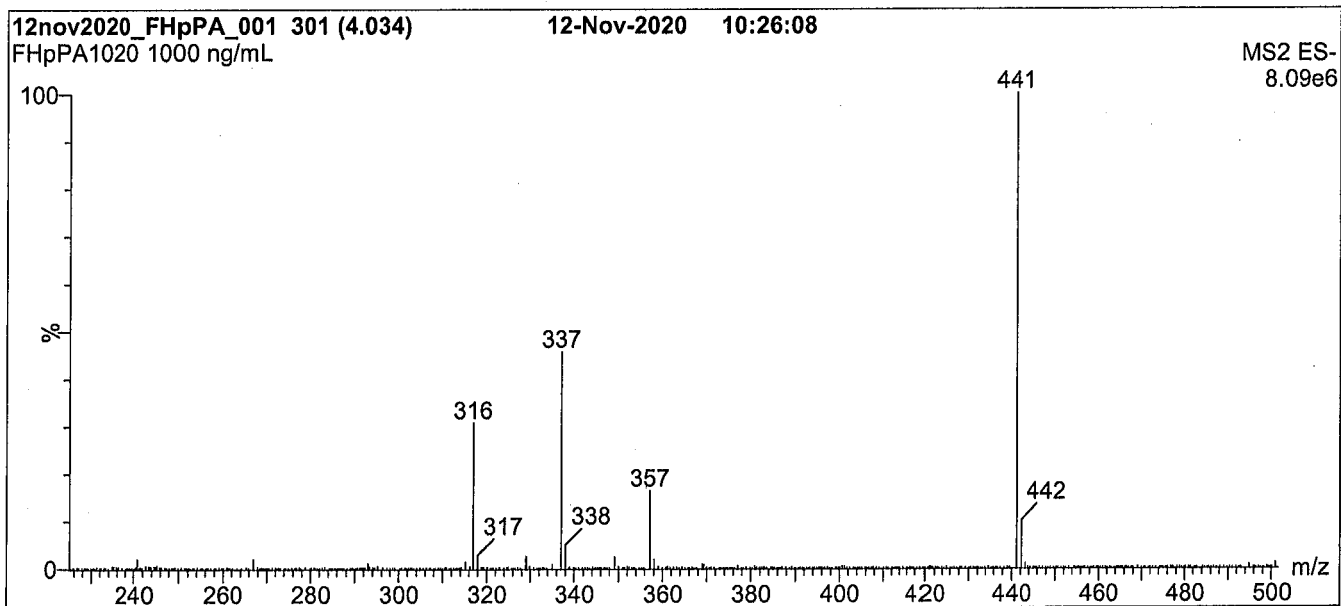
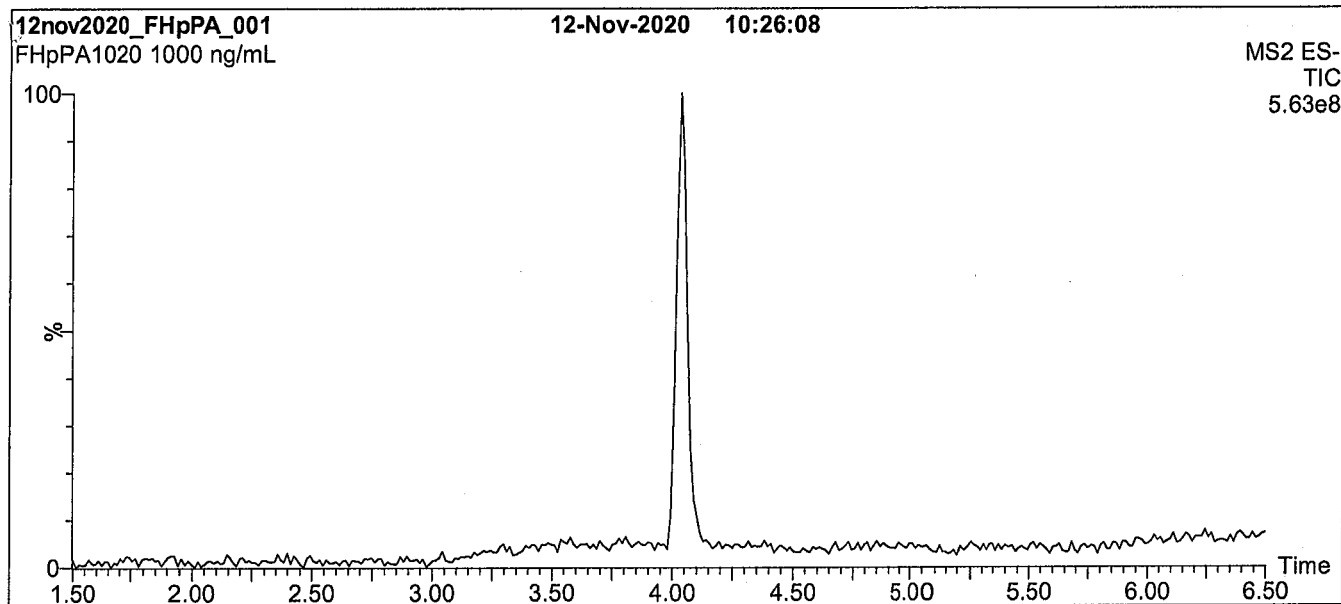
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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-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

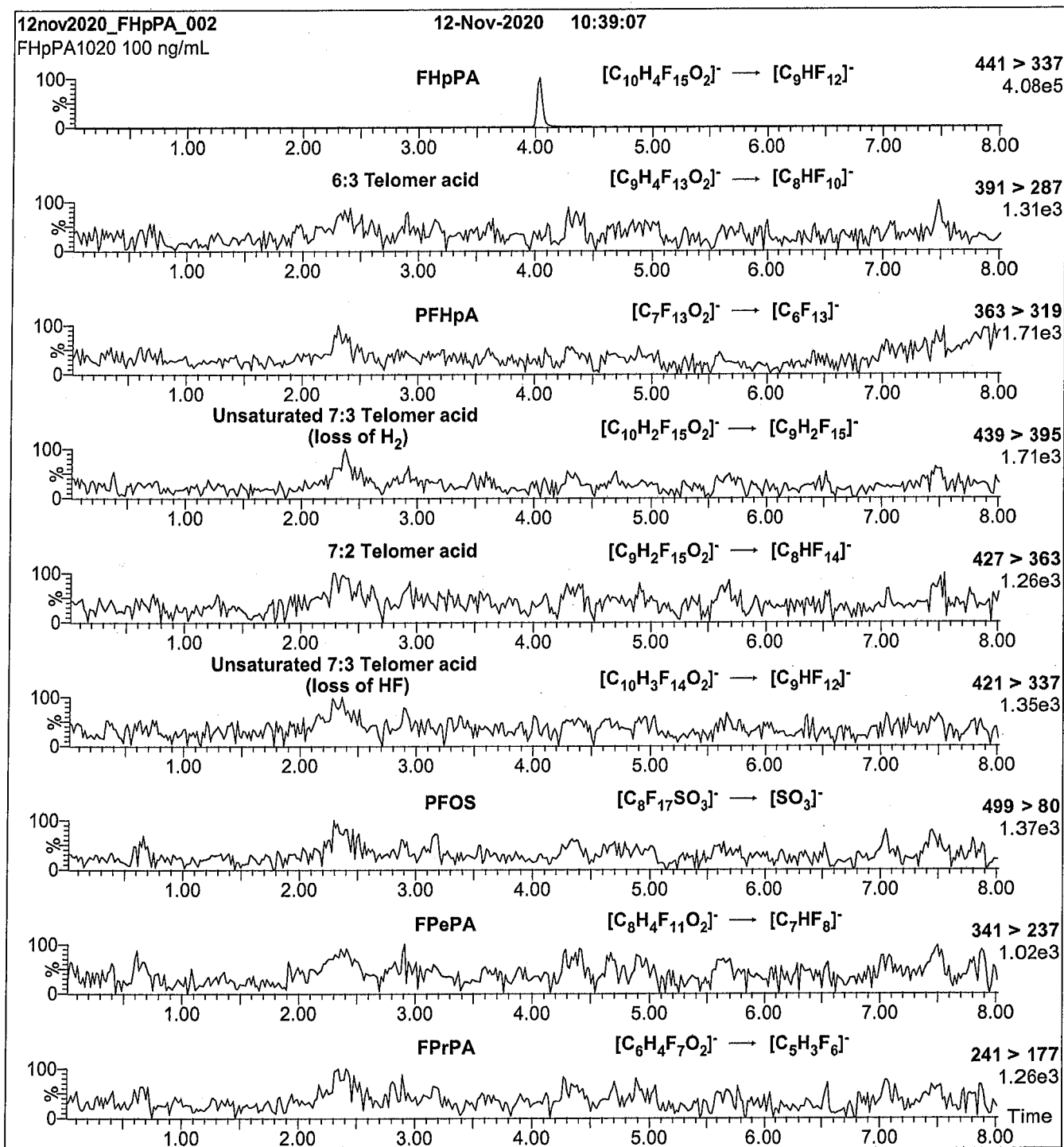
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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 (°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

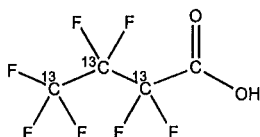


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CHF₇O₂ **MOLECULAR WEIGHT:** 217.02
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (2,3,4-¹³C₃)
LAST TESTED: (mm/dd/yyyy) 08/19/2021
EXPIRY DATE: (mm/dd/yyyy) 08/19/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 08/25/2021
 (mm/dd/yyyy)

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

INTENDED USE:

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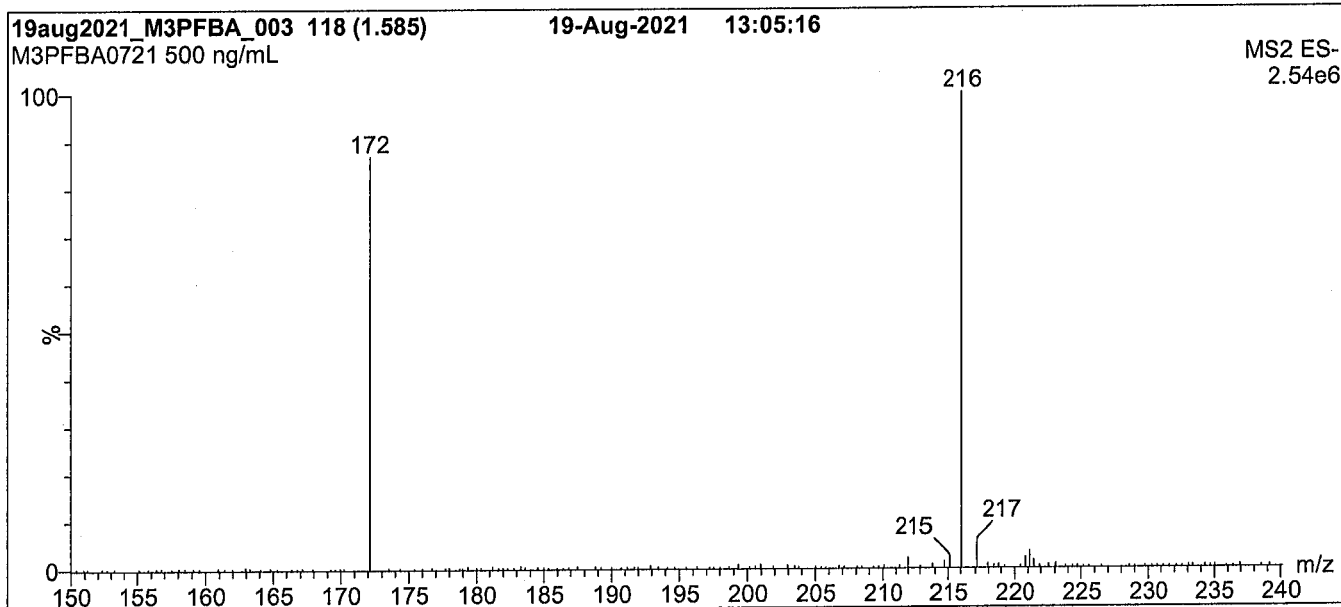
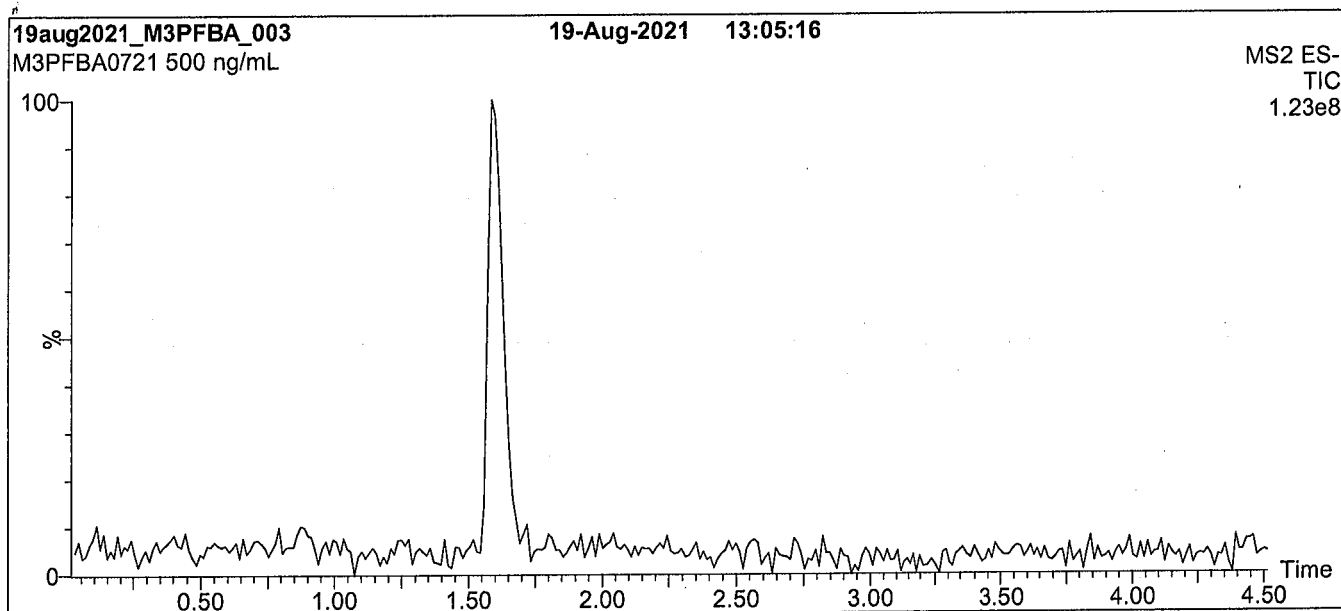
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Figure 1: M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

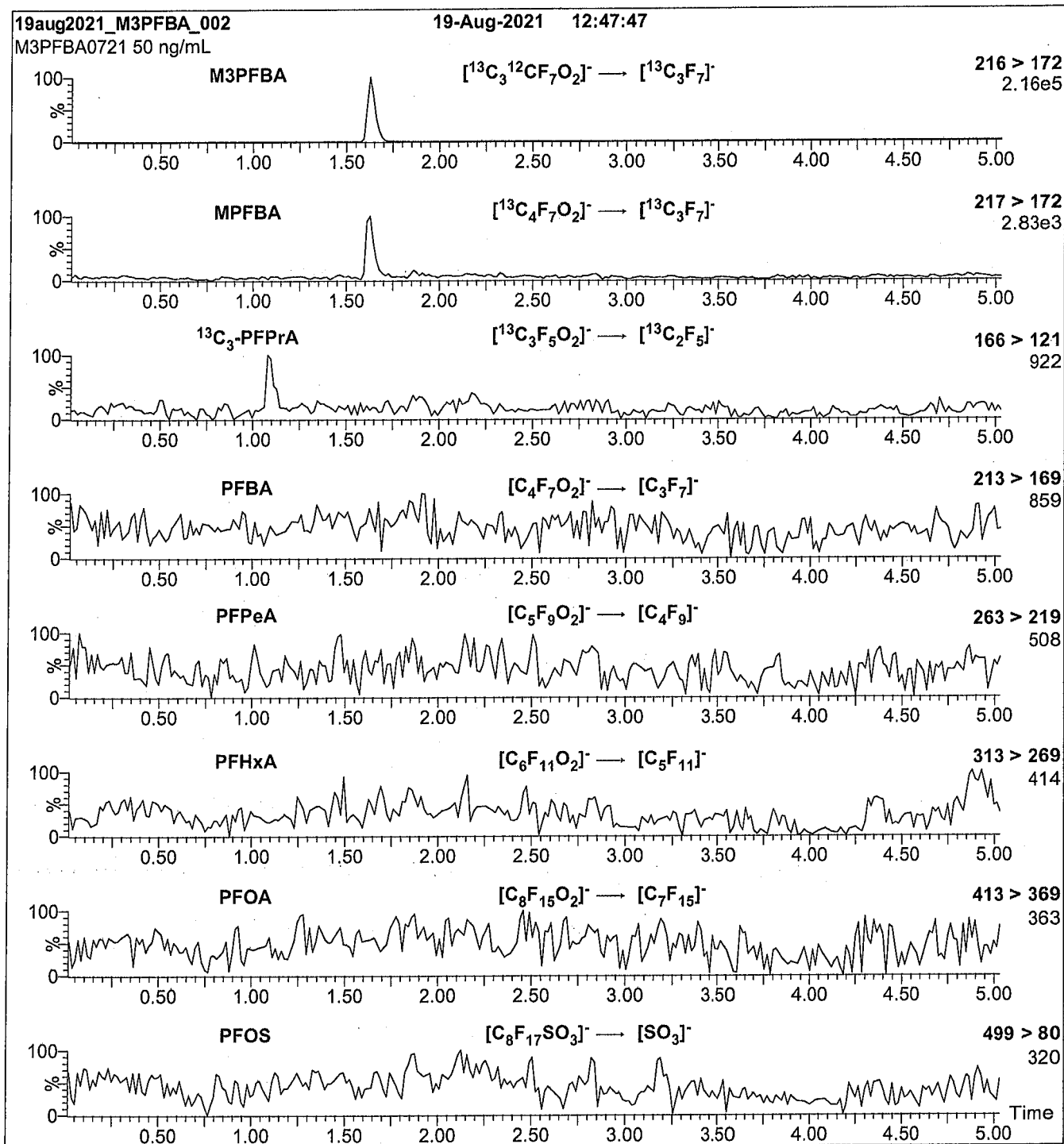
Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

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

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

Injection: On-column (M3PFBA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.45e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0116

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

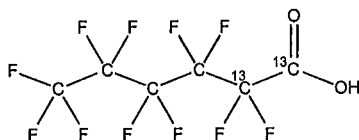
Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA		13C3-PFBA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA **LOT NUMBER:** MPFHxA0921
COMPOUND: Perfluoro-n-(1,2-¹³C₂)hexanoic acid
STRUCTURE: **CAS #:** 960315-47-3



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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 10/22/2021
 (mm/dd/yyyy)

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

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LIMITED WARRANTY:

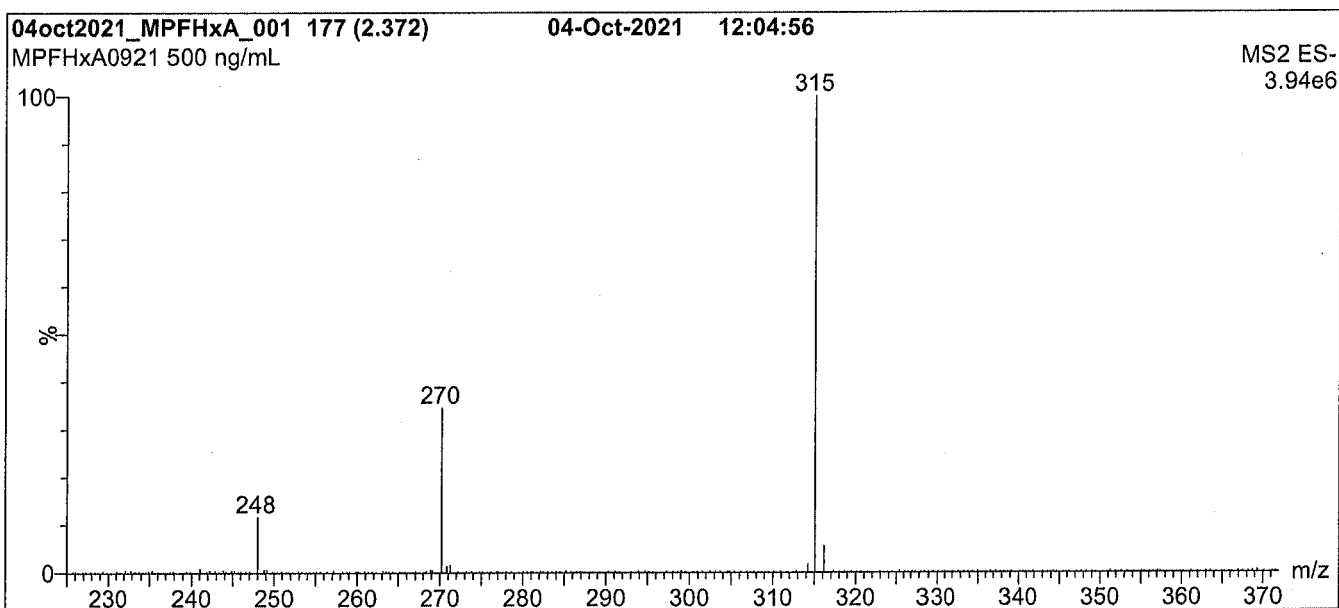
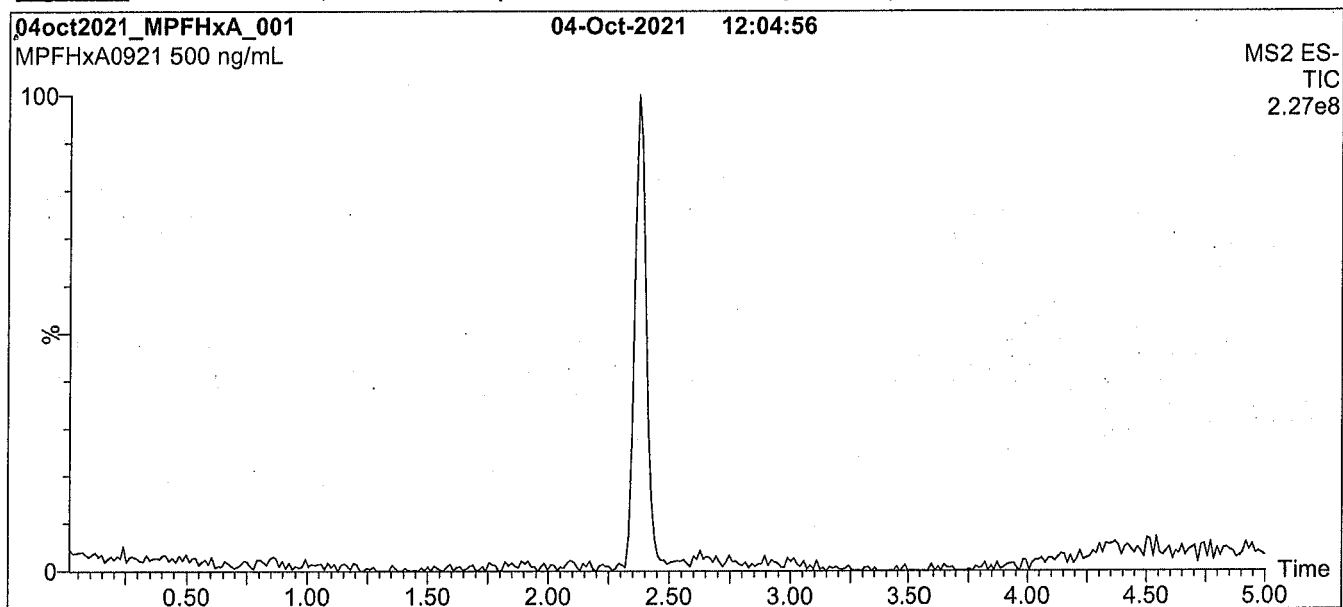
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Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

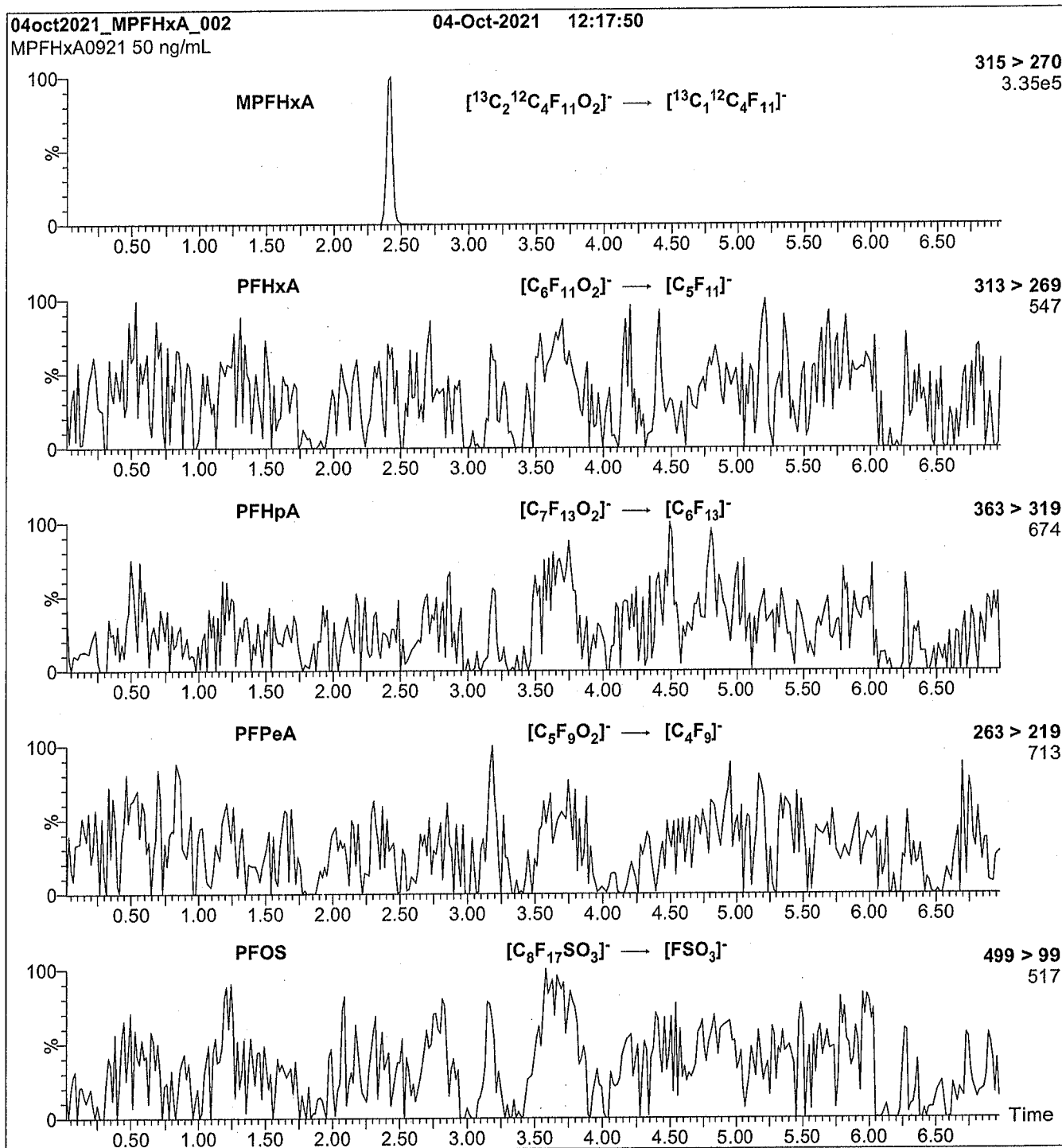
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

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 ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0117

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

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

Analytical Standard Record

22A0117

Description:	PFAS - IIS MPFHxA 50ug/mL	Expires:	10/04/2026
Standard Type:	Analyte Spike	Prepared:	10/04/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
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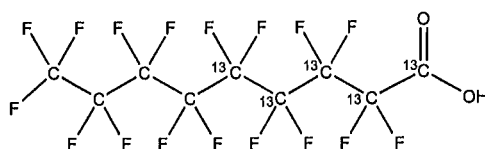
Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFNA **LOT NUMBER:** MPFNA1021
COMPOUND: Perfluoro-n-(1,2,3,4,5-¹³C₅)nonanoic acid
STRUCTURE: **CAS #:** 960315-49-5



MOLECULAR FORMULA: $^{13}\text{C}_5^{12}\text{C}_4\text{HF}_{17}\text{O}_2$ **MOLECULAR WEIGHT:** 469.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,5-¹³C₅)
LAST TESTED: (mm/dd/yyyy) 10/29/2021
EXPIRY DATE: (mm/dd/yyyy) 10/29/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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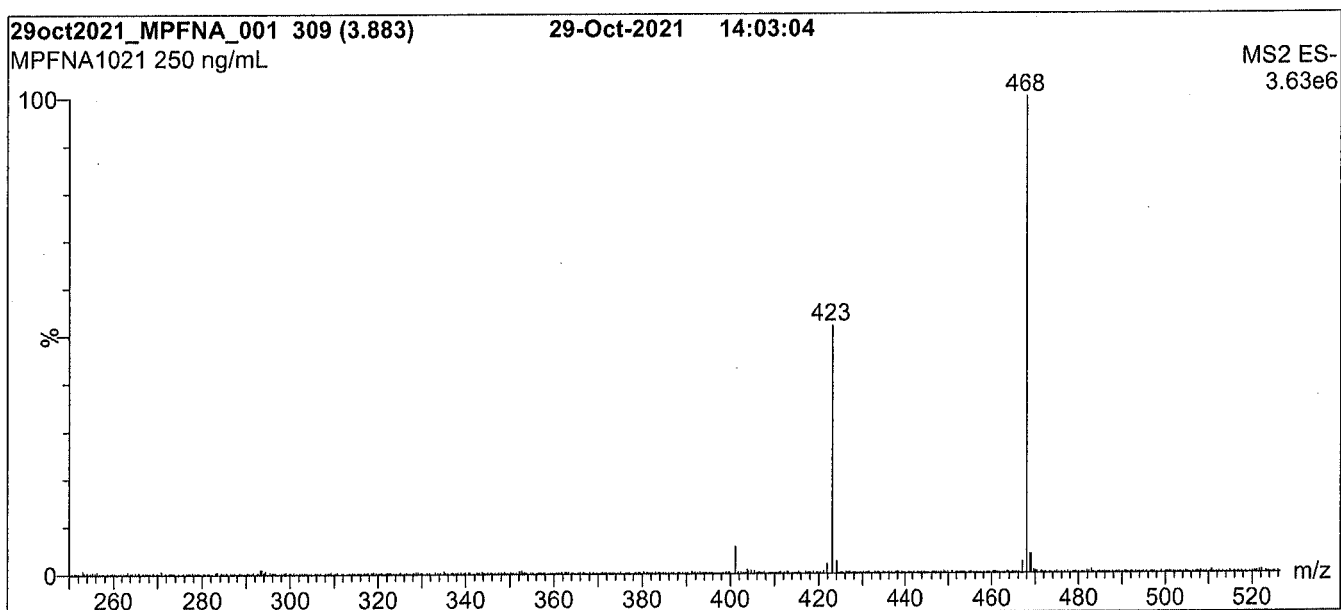
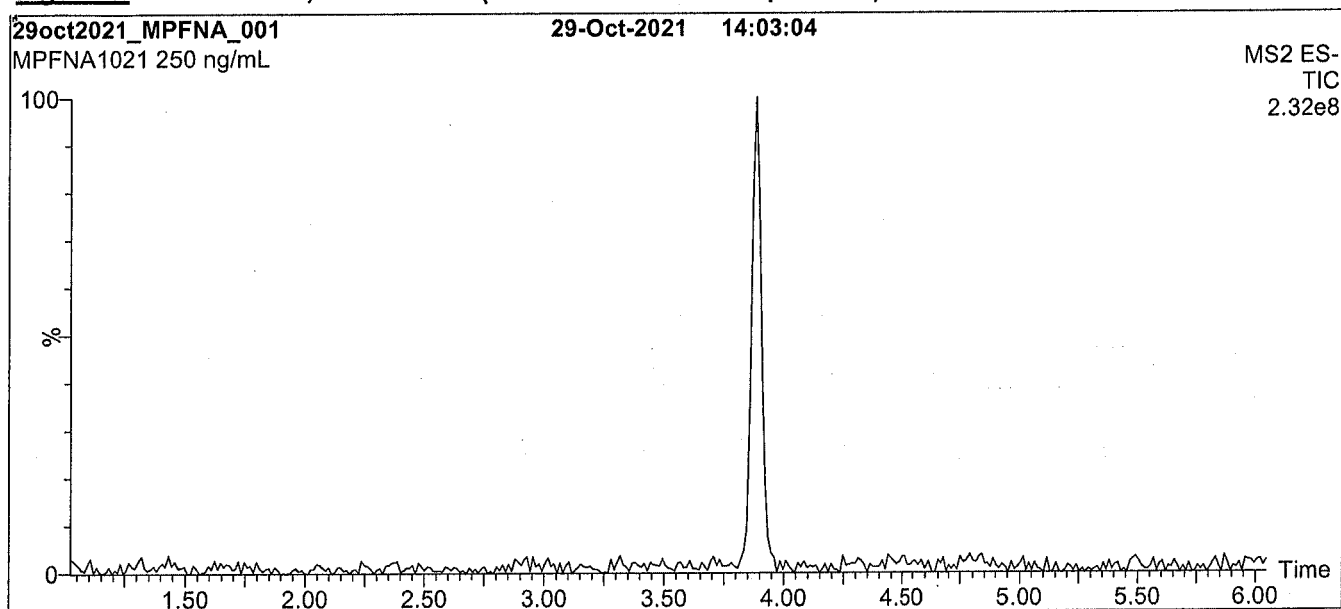
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QUALITY MANAGEMENT:

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



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

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

Chromatographic Conditions:

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

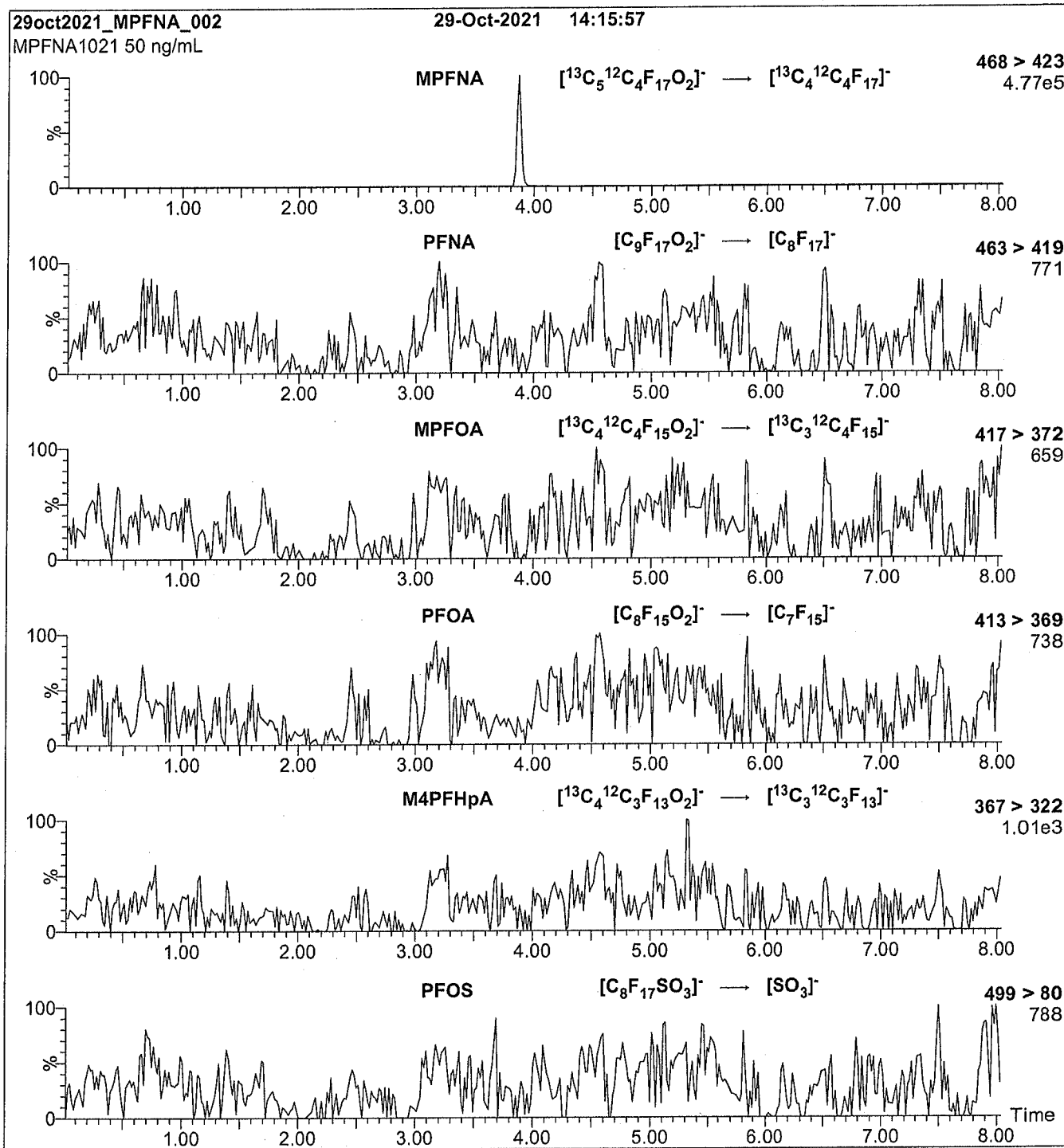
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°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

INTENDED USE:

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UNCERTAINTY:

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

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

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

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LIMITED WARRANTY:

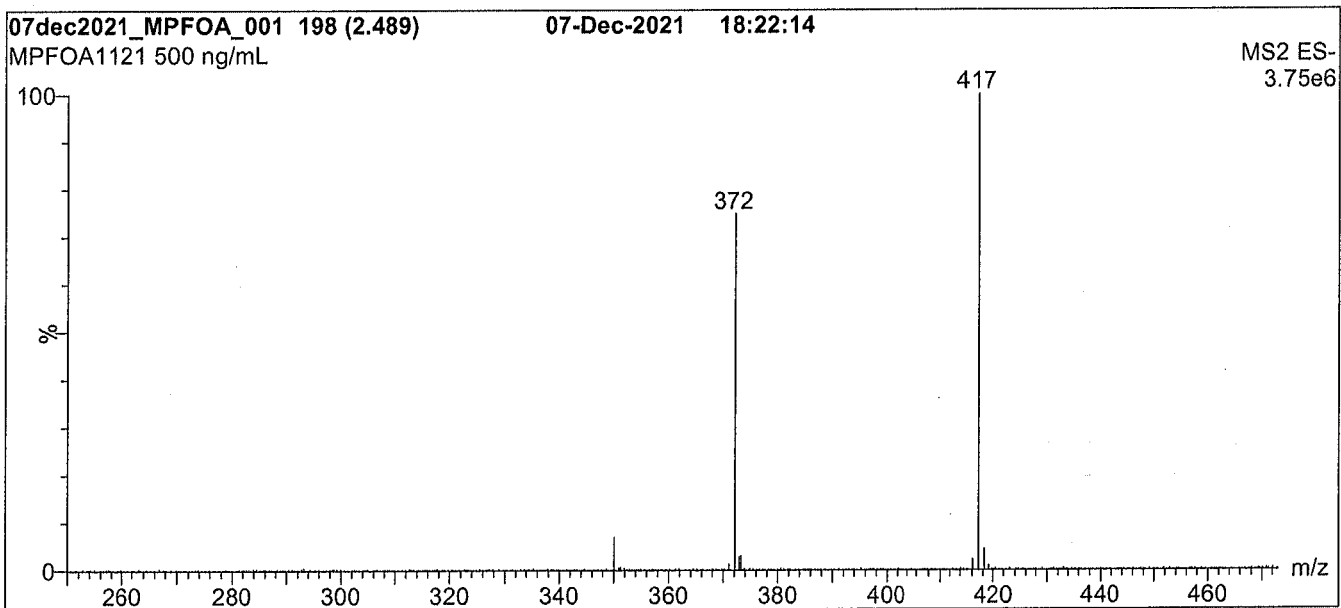
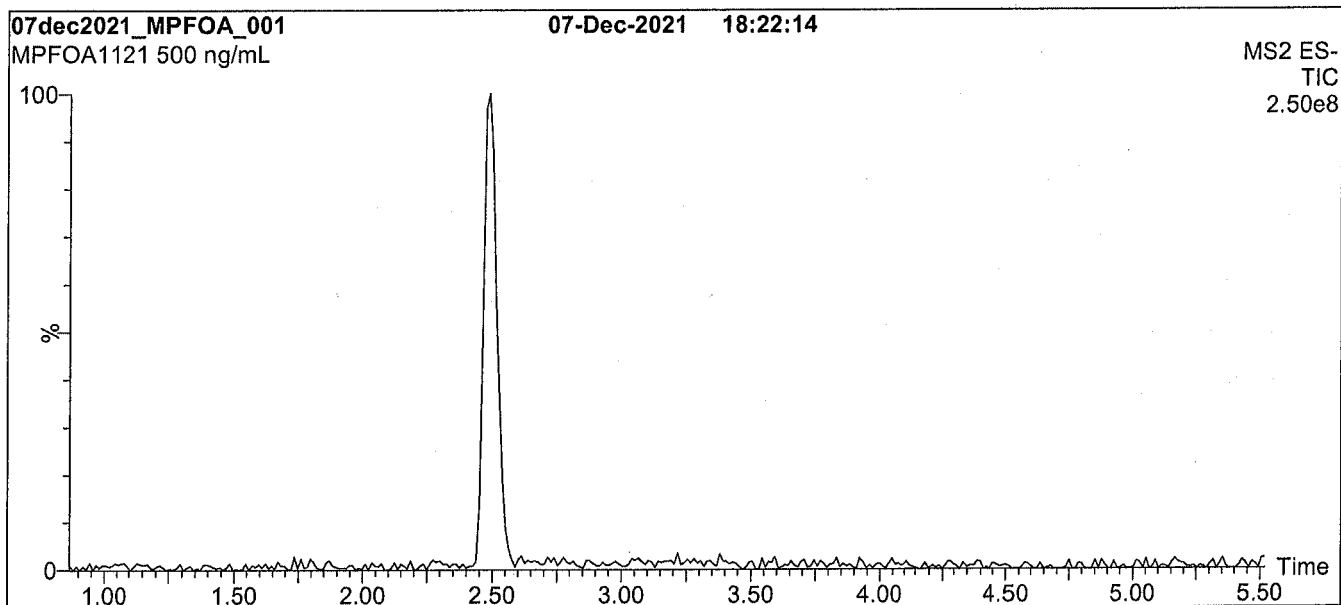
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Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

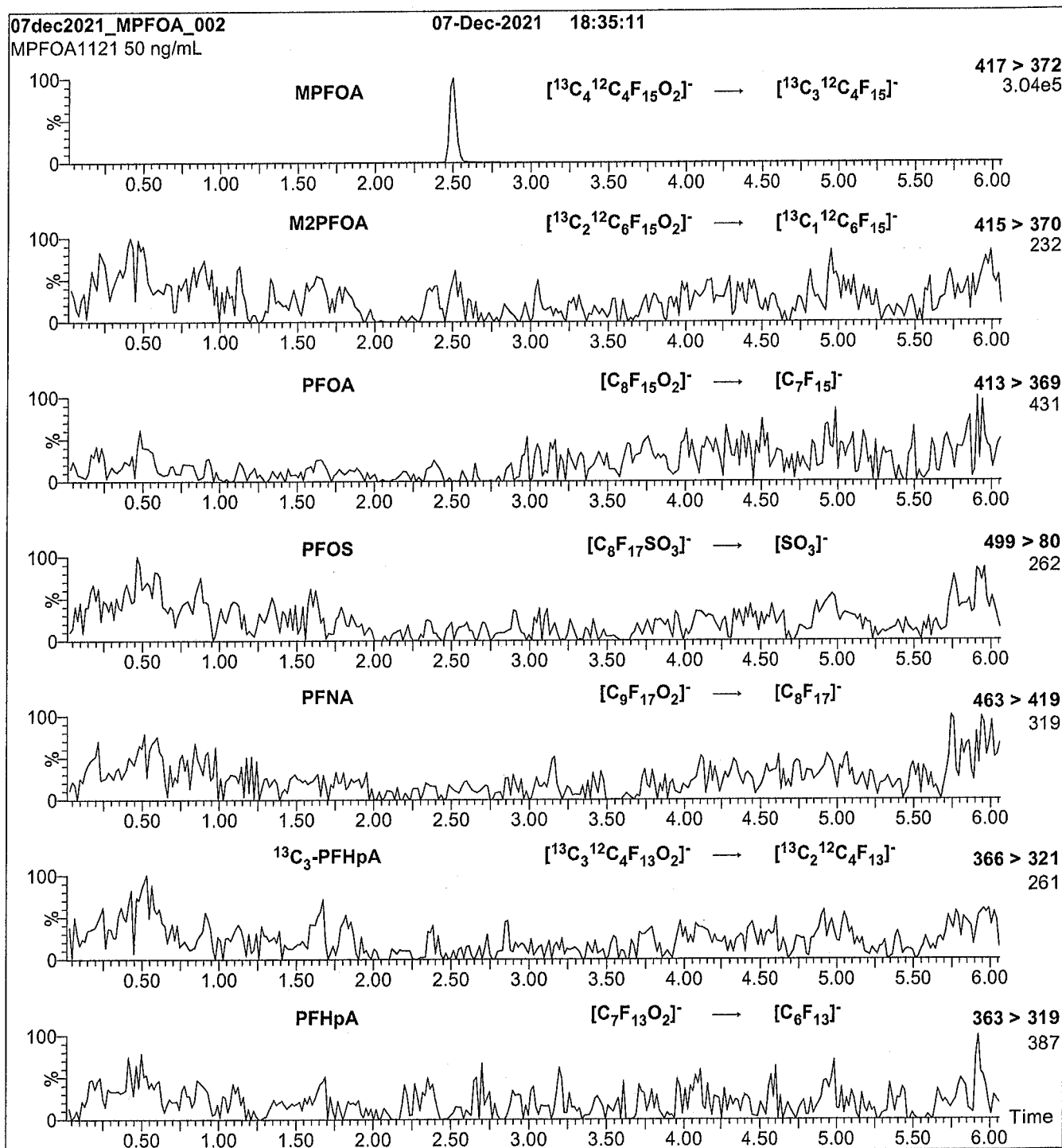
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

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

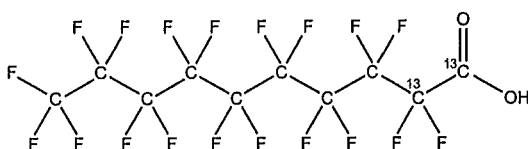


WELLINGTON LABORATORIES

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:

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:

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

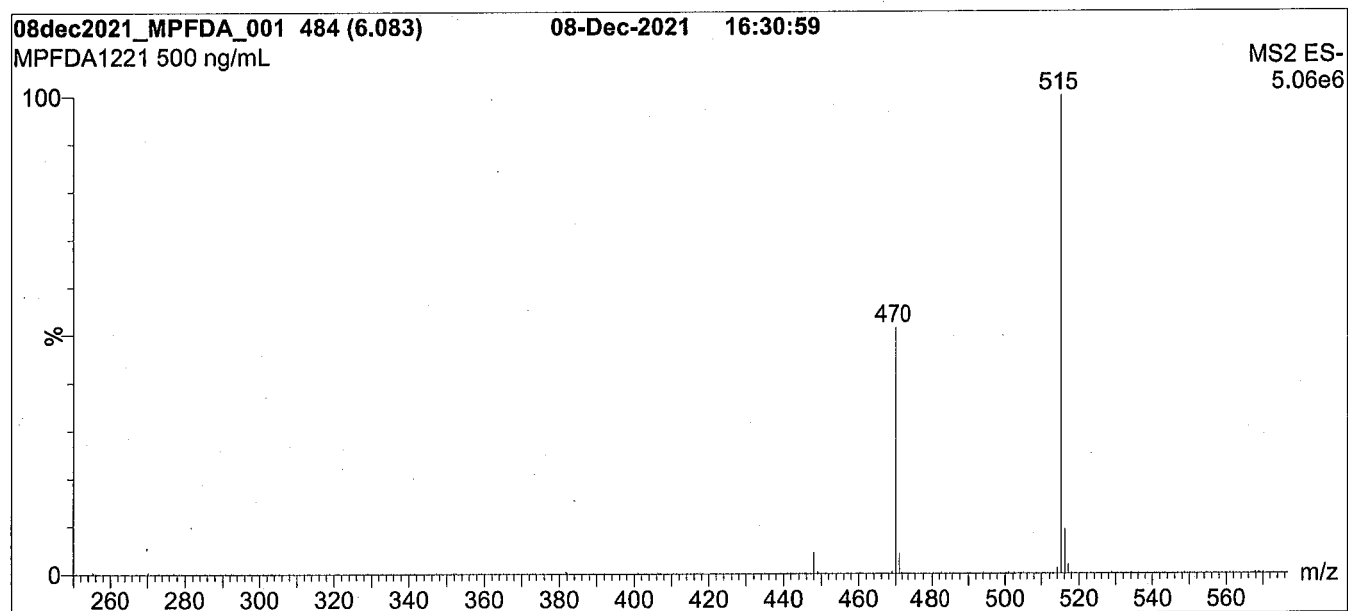
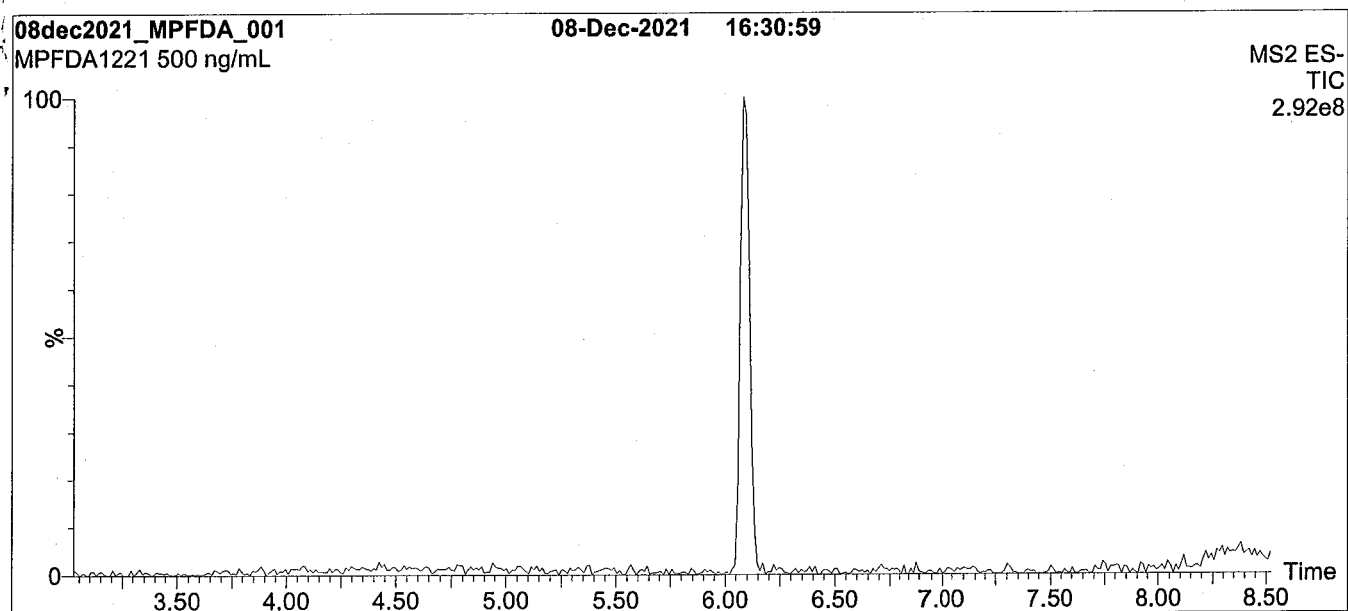
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Figure 1: MPFDA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

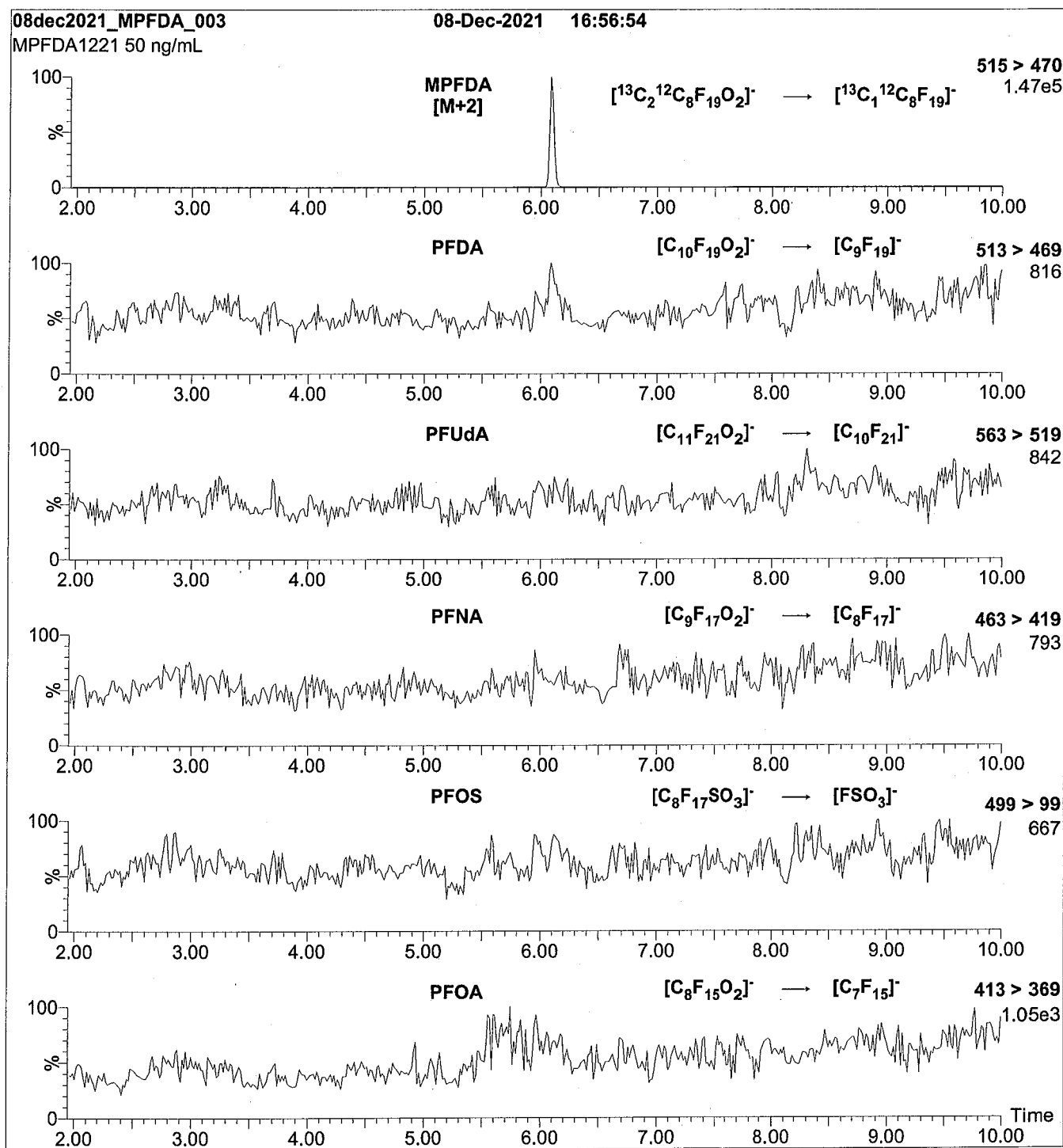
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 10

Analytical Standard Record

22A0120

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

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

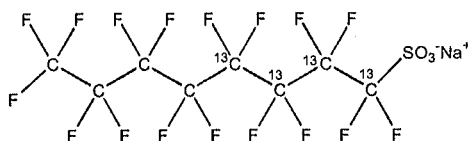


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

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



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

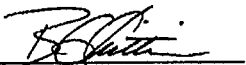
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.4% sodium perfluoro-1-(¹³C₃)heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

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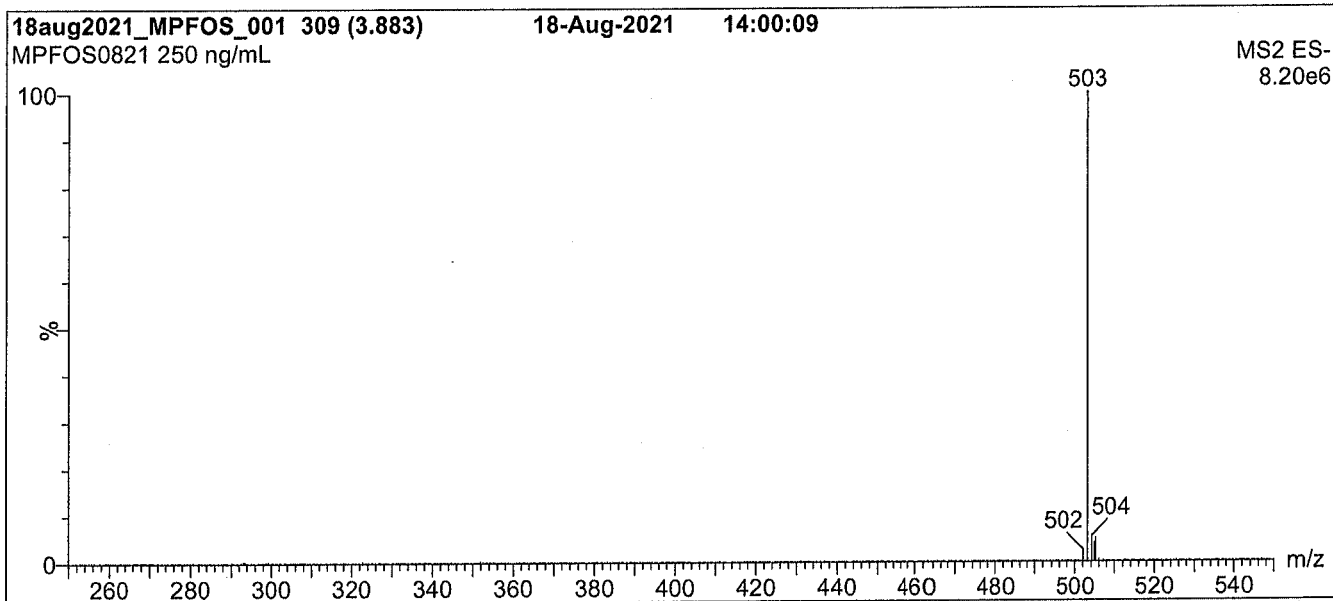
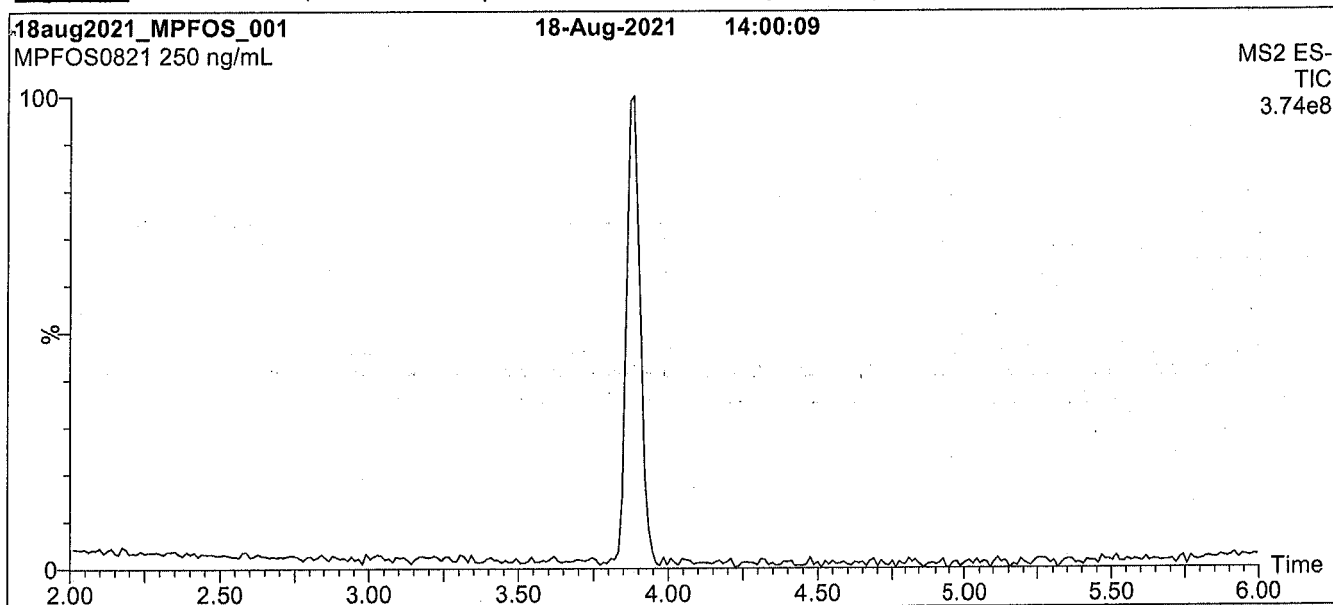
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Figure 1: MPFOS; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

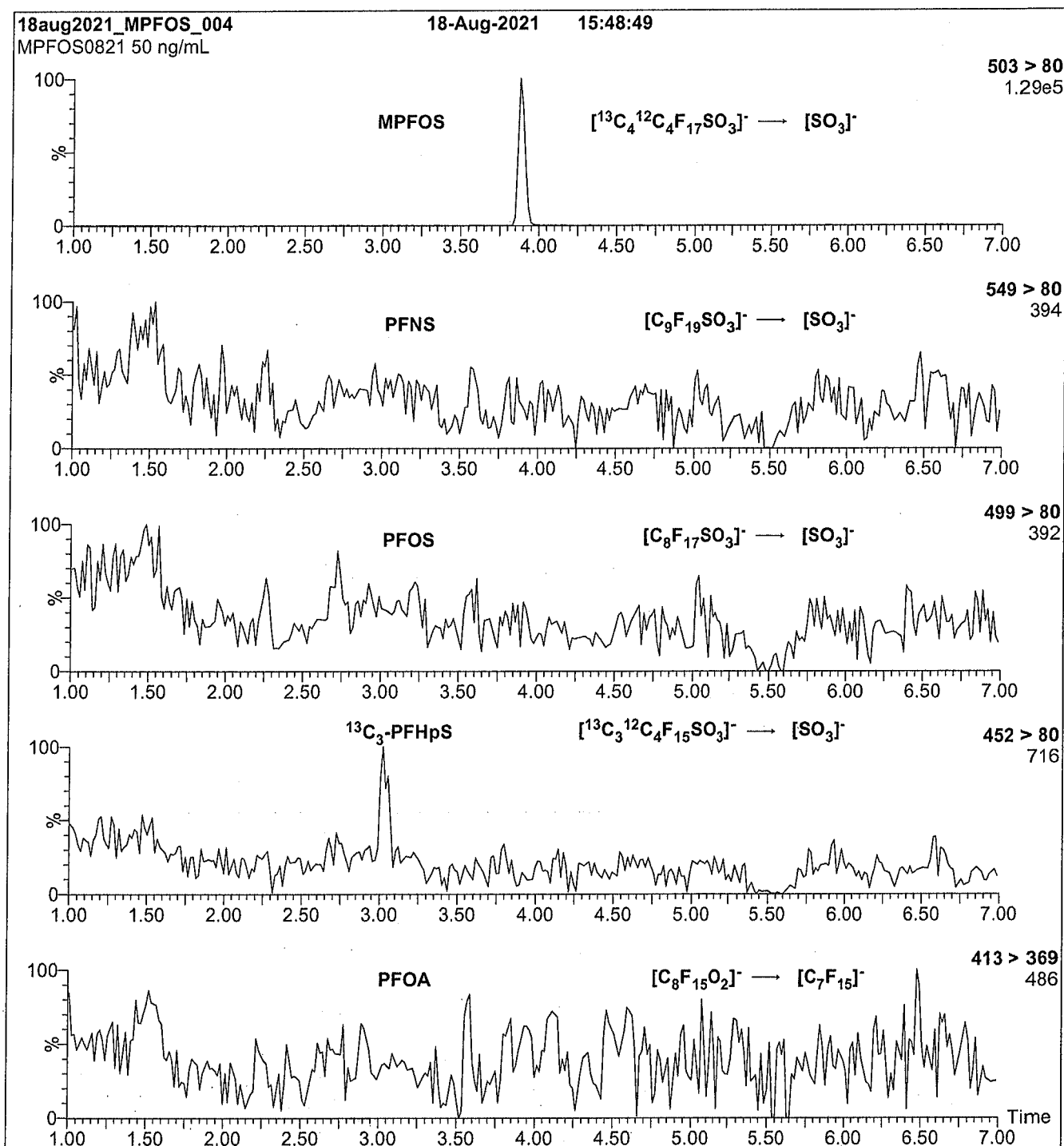
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

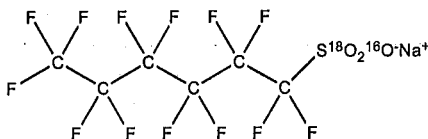


WELLINGTON LABORATORIES

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 11/05/2021
 (mm/dd/yyyy)

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

INTENDED USE:

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

HANDLING:

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

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:

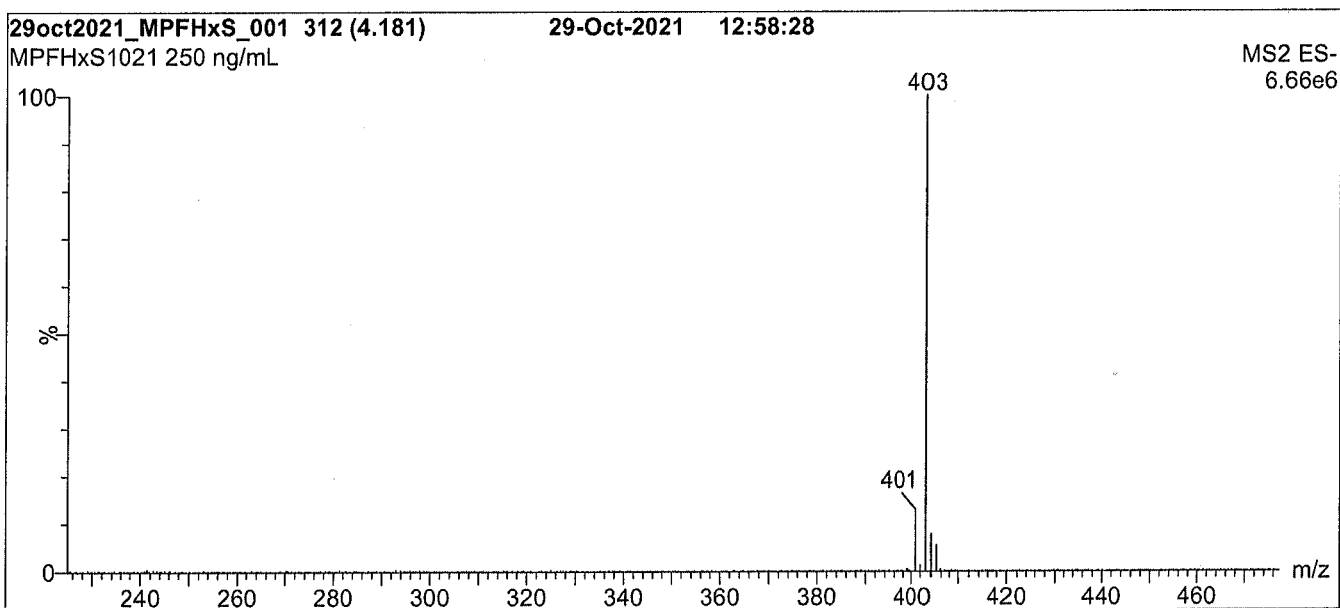
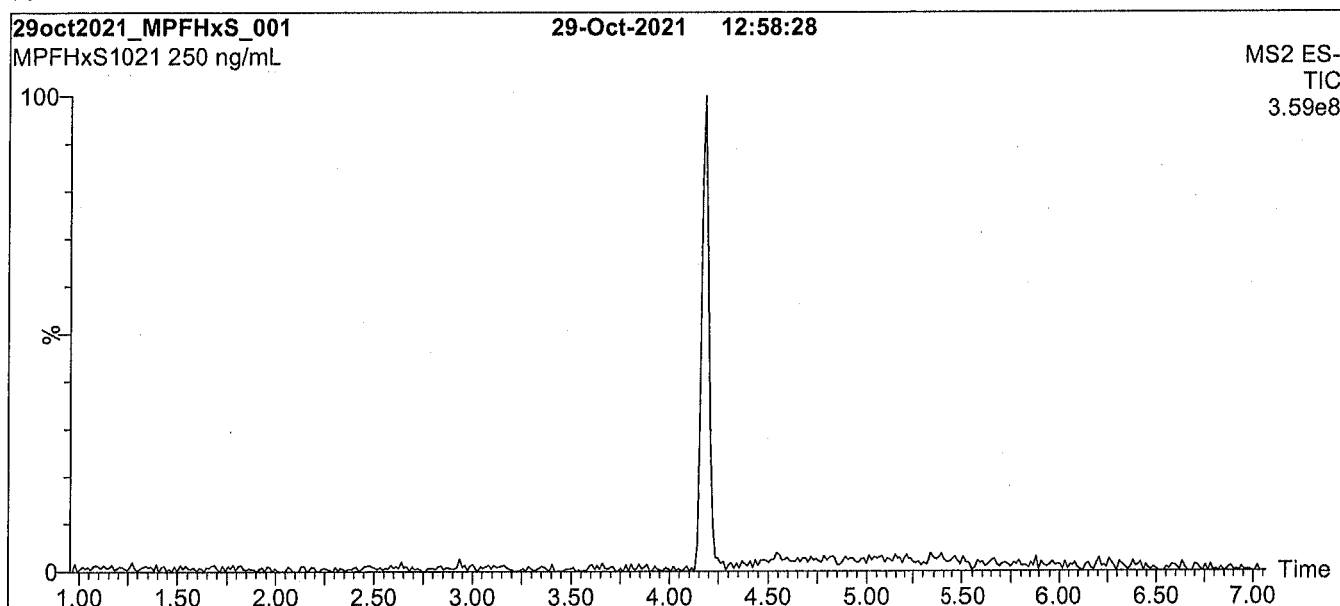
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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: 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

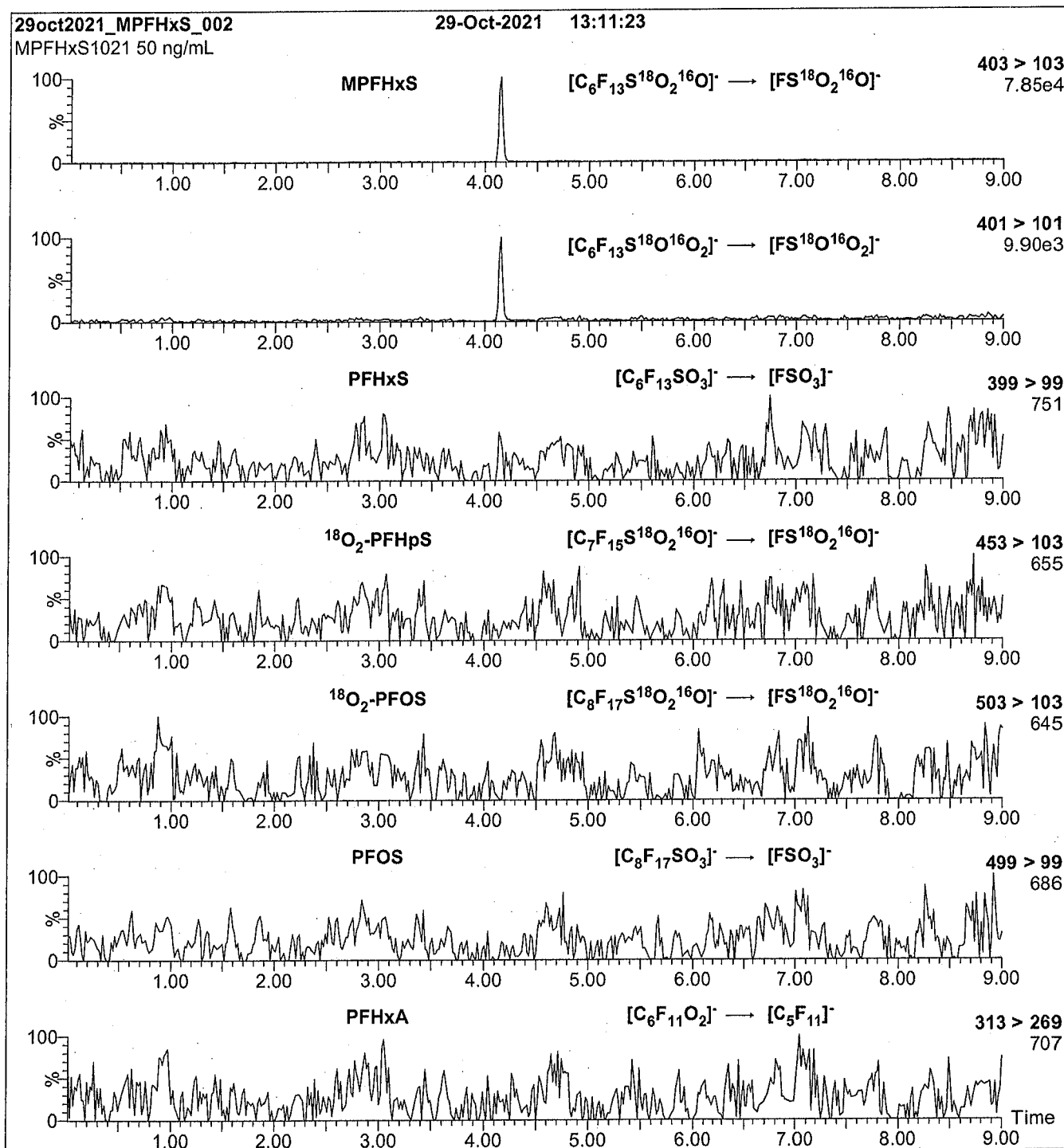
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

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 (°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

Calbiochem[®]



Certificate of Analysis

Taurodeoxycholic Acid, Sodium Salt - CAS 1180-95-6 - Calbiochem

Batch Number: 3761825
Material Number: 580221-5GM
Molecular Formula: C₂₆H₄₄NO₆S · Na
Molecular Weight: 521.7
CAS Number: 1180-95-6

Quality Release Date: 05 OCT 2021
Recommended Retest Date: 30 SEP 2023

Analytical Data

Test	Tolerance	Result
Solubility:		H ₂ O (100 mg/ml)
Chloride:		<0.01%
Loss on drying:	≤5.0 %	0.1%
Color:		White
Form:		Powder
TLC:	≥95.0 %	≥95.00%
IR:		Conforms to reference
Optical rotation:	35.0 ° - 39.0 °	+36.38°
Water by Karl Fischer:	≤5.0 %	2.86%
Carbon:	≥0.00 %	57.78%
Hydrogen:	≥0.00 %	8.32 %
Nitrogen:	≥0.00 %	2.77 %

Storage and Handling: +15°C to +30°C

This lot conforms to specifications established by EMD Millipore Corporation for this product.

Issued by **Jamie Thomas**

This document has been electronically produced and is valid without a signature

Quality Control/ Assurance Signature

05 OCT 2021

Date

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EMD Millipore Corporation | 28820 Single Oak Dr., Temecula, CA 92590

Technical Support NA +1-800-221-1975 | email: www.millipore.com/techservices | www.calbiochem.com

Technical Support All Other Countries - Contact Your Local Office

FOR RESEARCH USE ONLY.

Not for use in diagnostic procedures. Not for human or animal consumption. Purchase of this product does not include any right to resell or transfer, either as a stand-alone product or as a component of another product. Any use of this Product for purpose other than research is strictly prohibited.

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Darmstadt, Germany

580221-5GM/09-MAY-2018/EA

Analytical Standard Record

22A0123

Description:	PFAS Taurodeoxycholic Acid, Sodium Salt	Expires:	09/30/2023
Standard Type:	Other	Prepared:	10/05/2021
Solvent:	n/a	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:54 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID		516-50-7	1	ug/mL

Analytical Standard Record

22A0123

Description:	PFAS Taurodeoxycholic Acid, Sodium Salt	Expires:	09/30/2023
Standard Type:	Other	Prepared:	10/05/2021
Solvent:	n/a	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:54 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID		516-50-7	1	ug/mL

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHXS	22A0122	18O2-PFHXS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

Analytical Standard Record

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

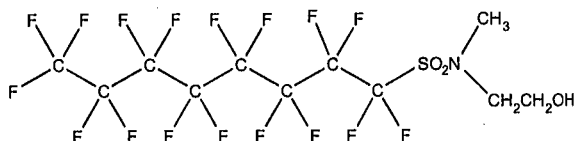


WELLINGTON LABORATORIES

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

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

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

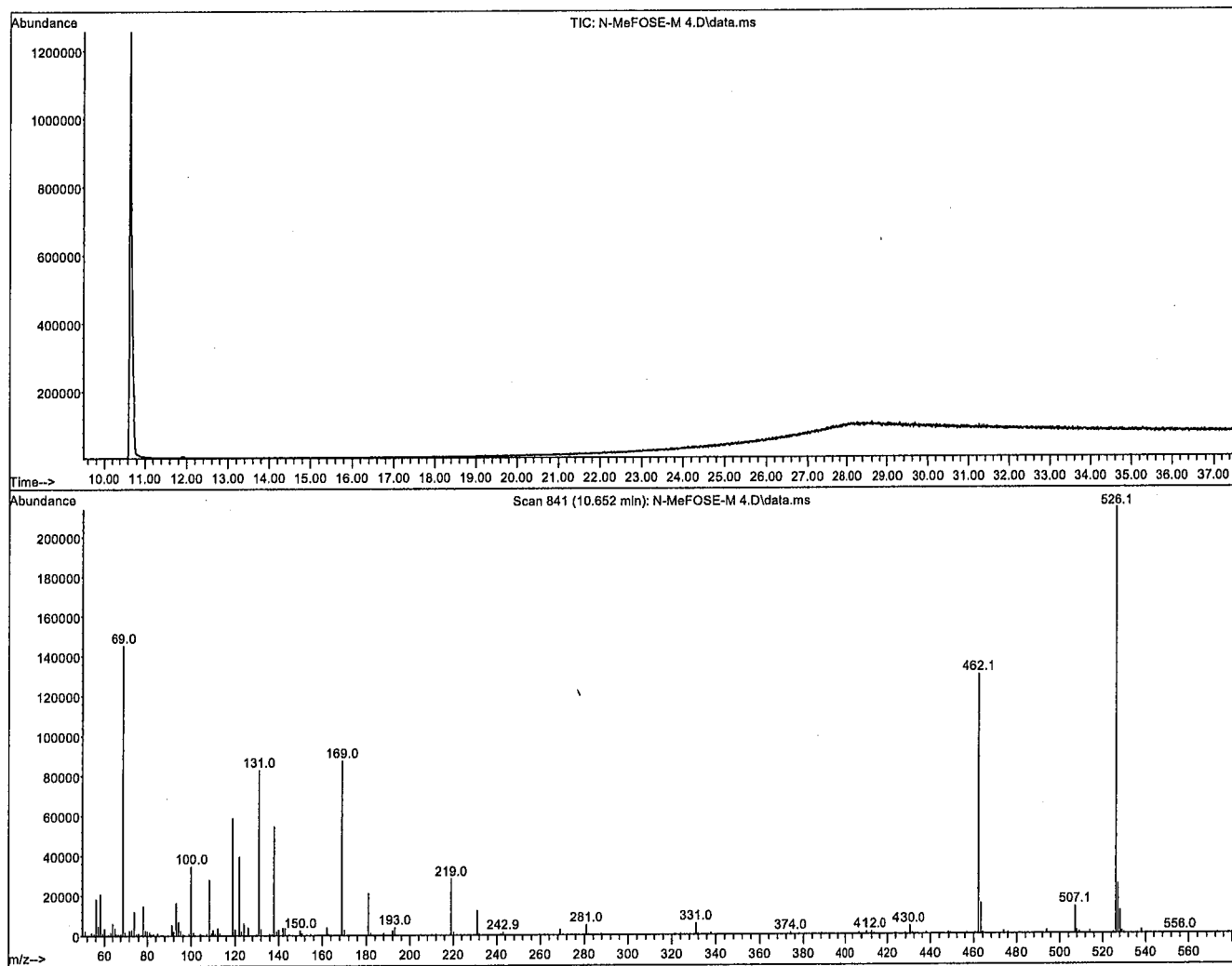
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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

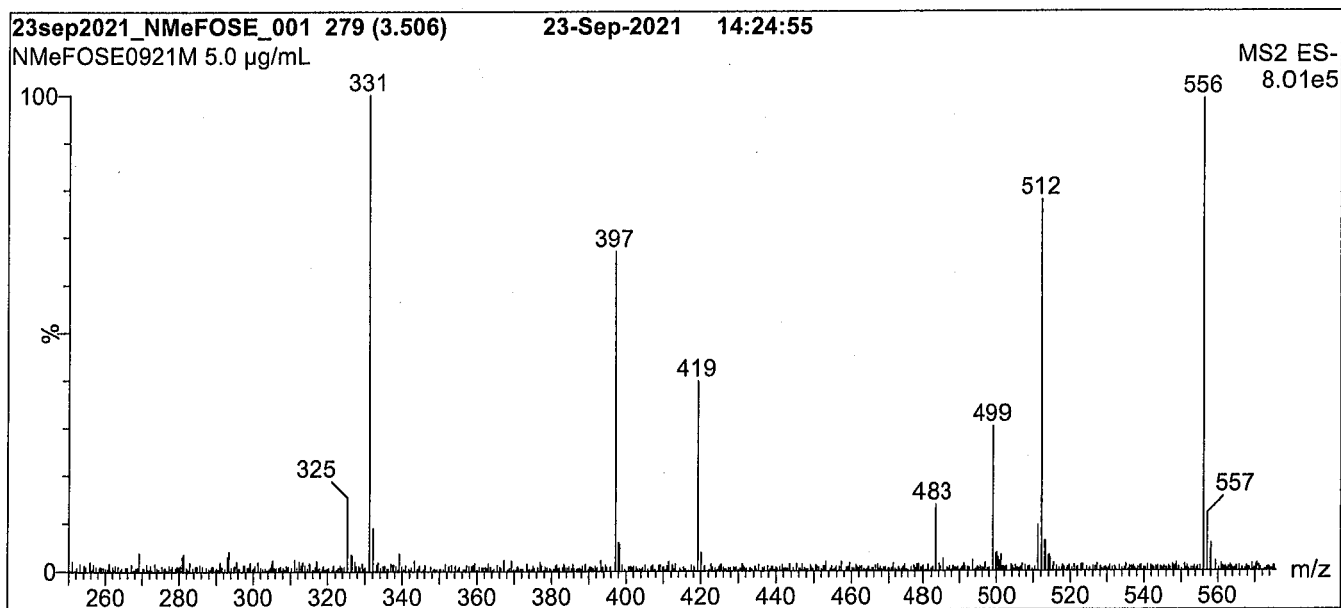
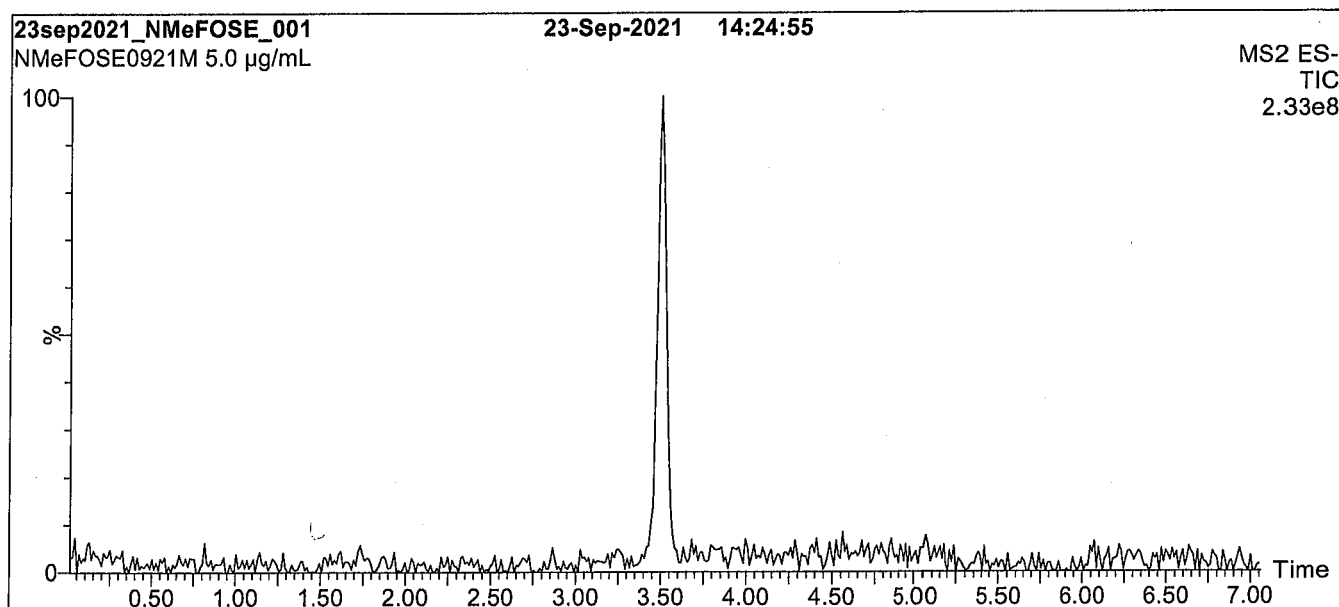
Flow: Constant at 1 mL/min

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)

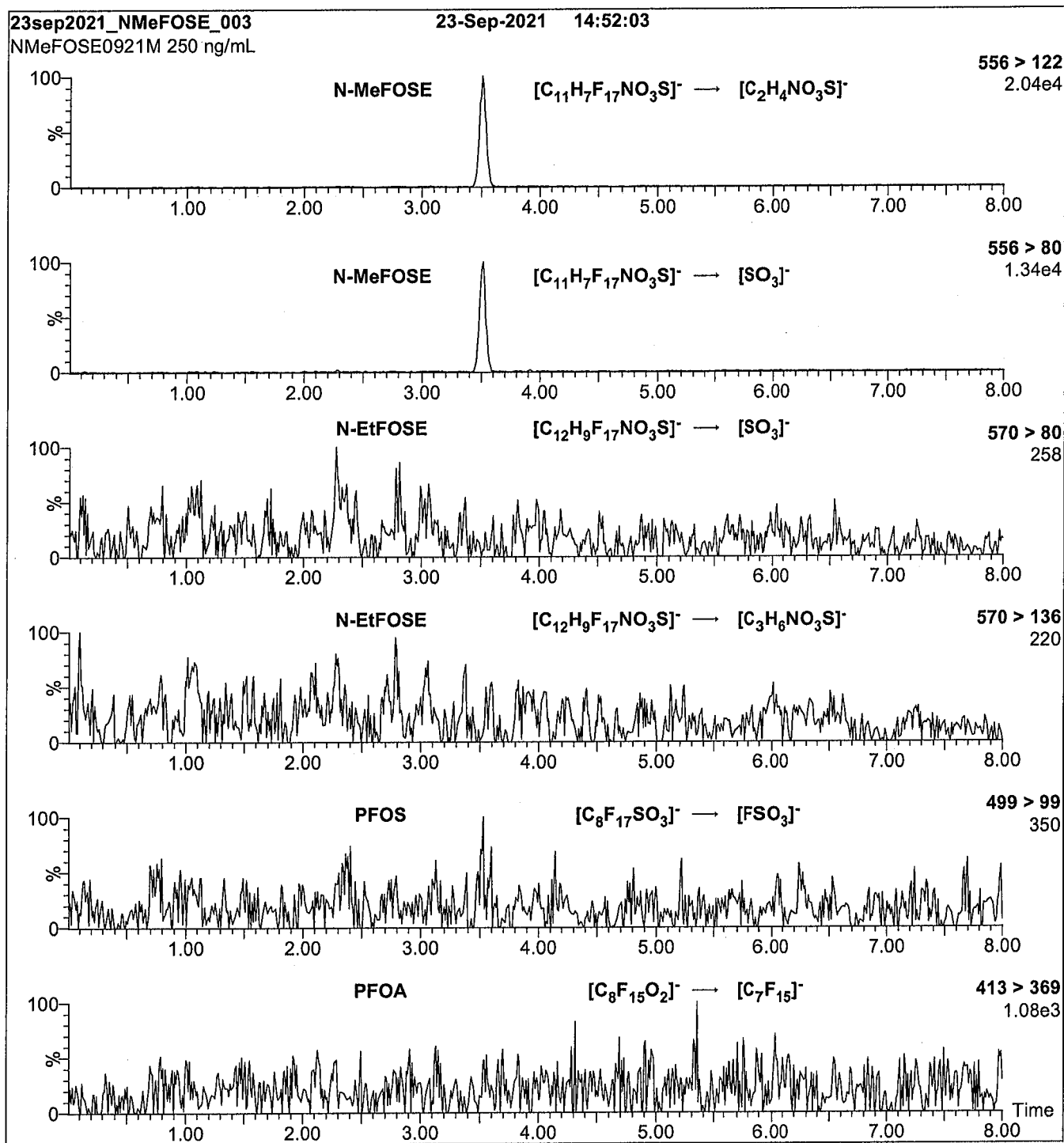
Source: Electrospray (negative)

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

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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UNCERTAINTY:

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

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

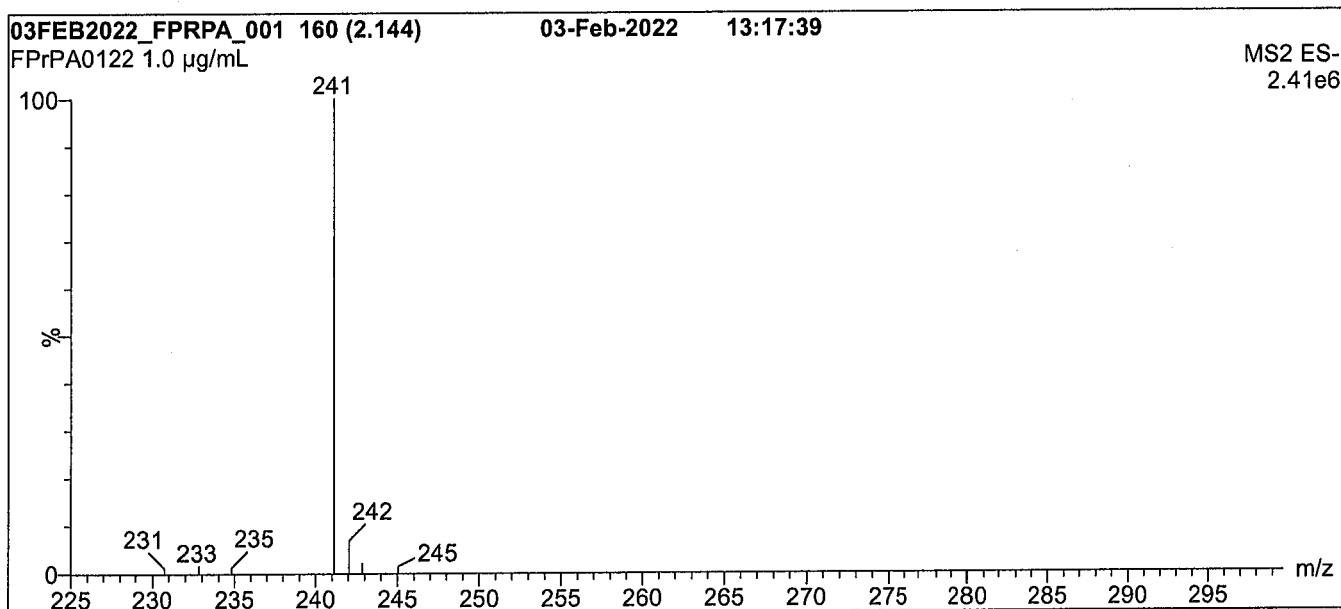
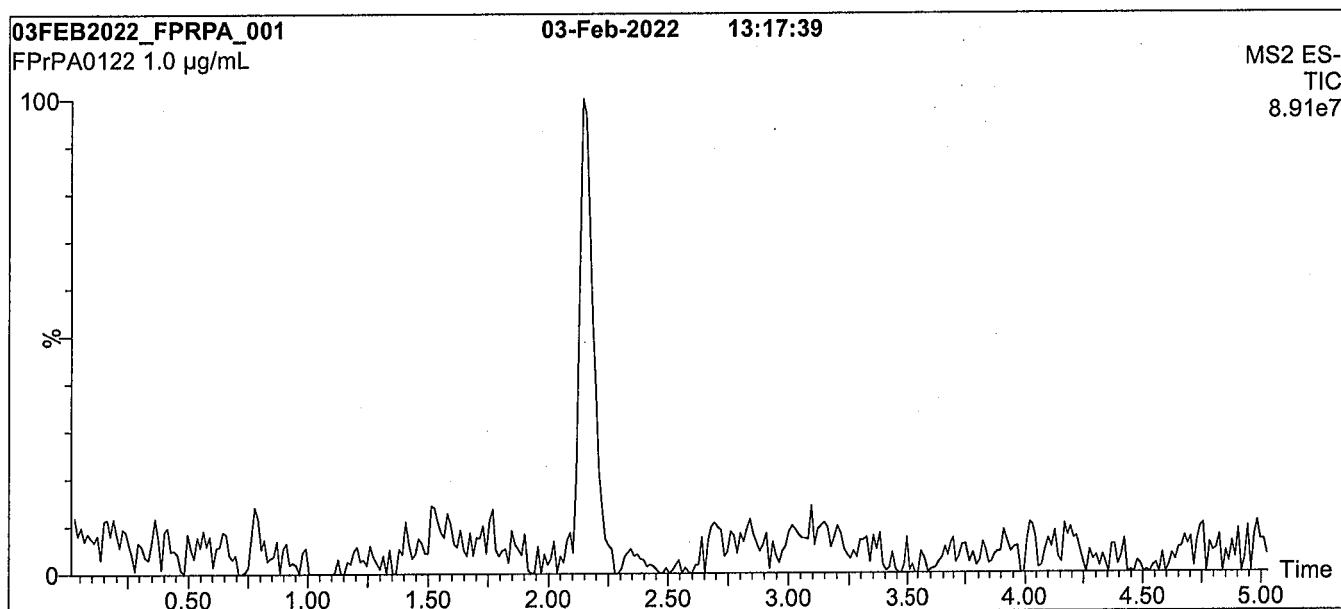
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

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

Chromatographic Conditions:

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

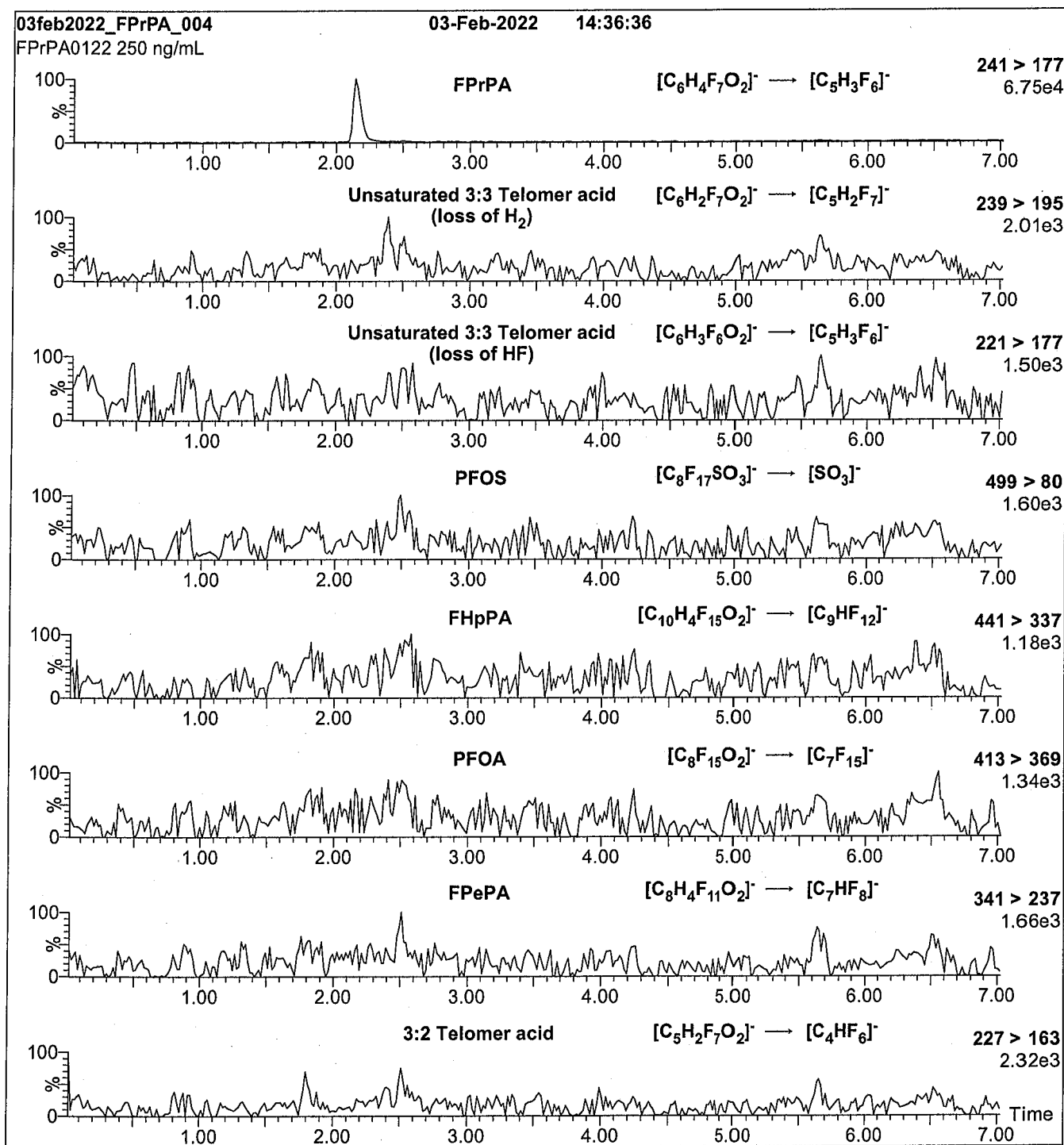
Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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

Injection: On-column (FPrPA)

MS Parameters:

Mobile phase: Same as Figure 1

Collision Gas (mbar) = 3.33e-3

Flow: 300 μ L/min

Collision Energy (eV) = 10

Analytical Standard Record

22C0308

Description:	PFAS - SAS FPrPA 50ug/mL	Expires:	02/03/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FPrPA0122)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

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

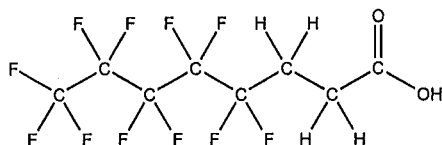


WELLINGTON LABORATORIES

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

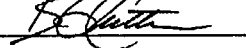
DOCUMENTATION/ DATA ATTACHED:

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

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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LIMITED WARRANTY:

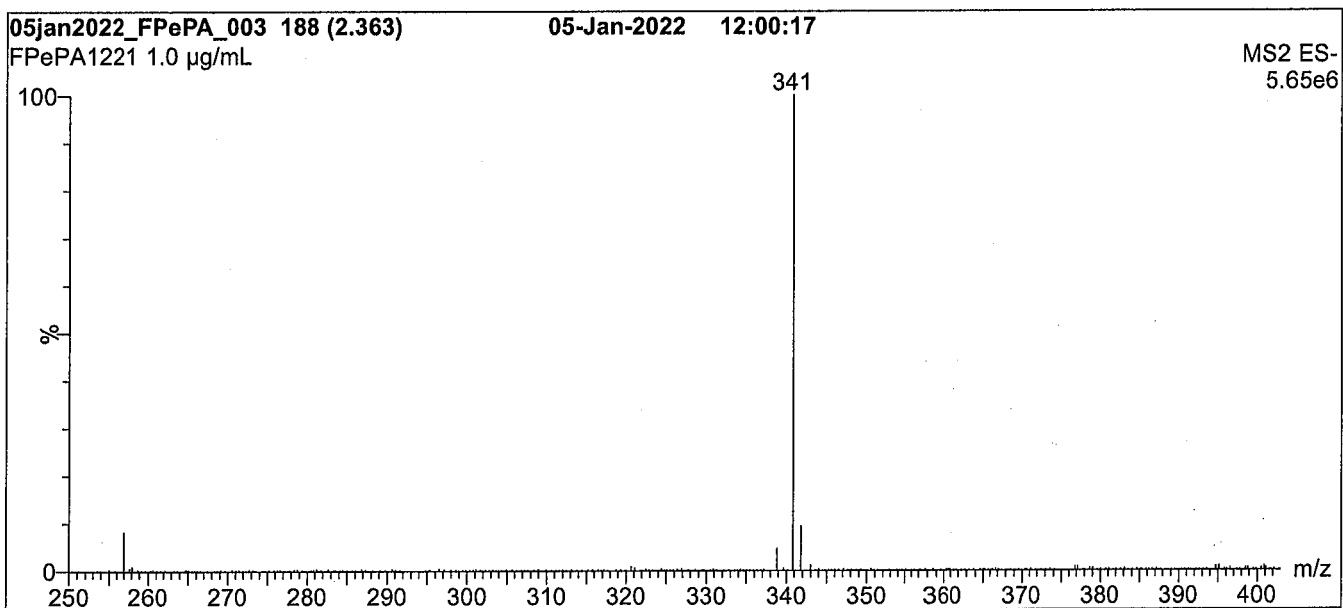
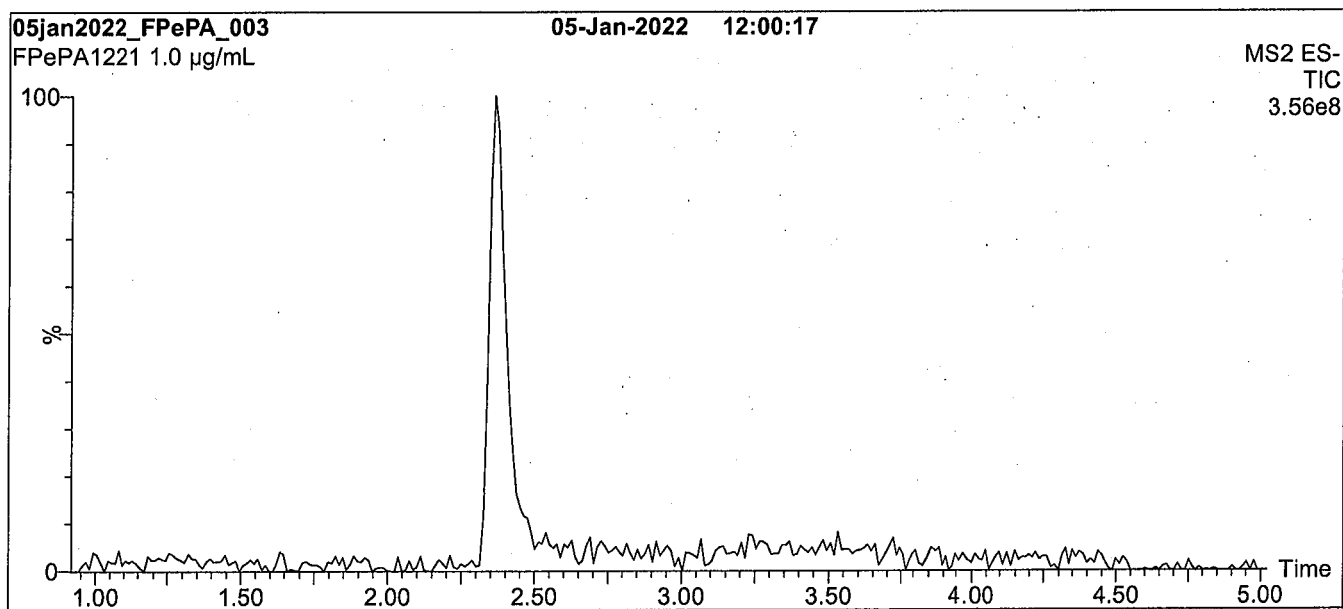
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QUALITY MANAGEMENT:

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

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

Chromatographic Conditions:

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

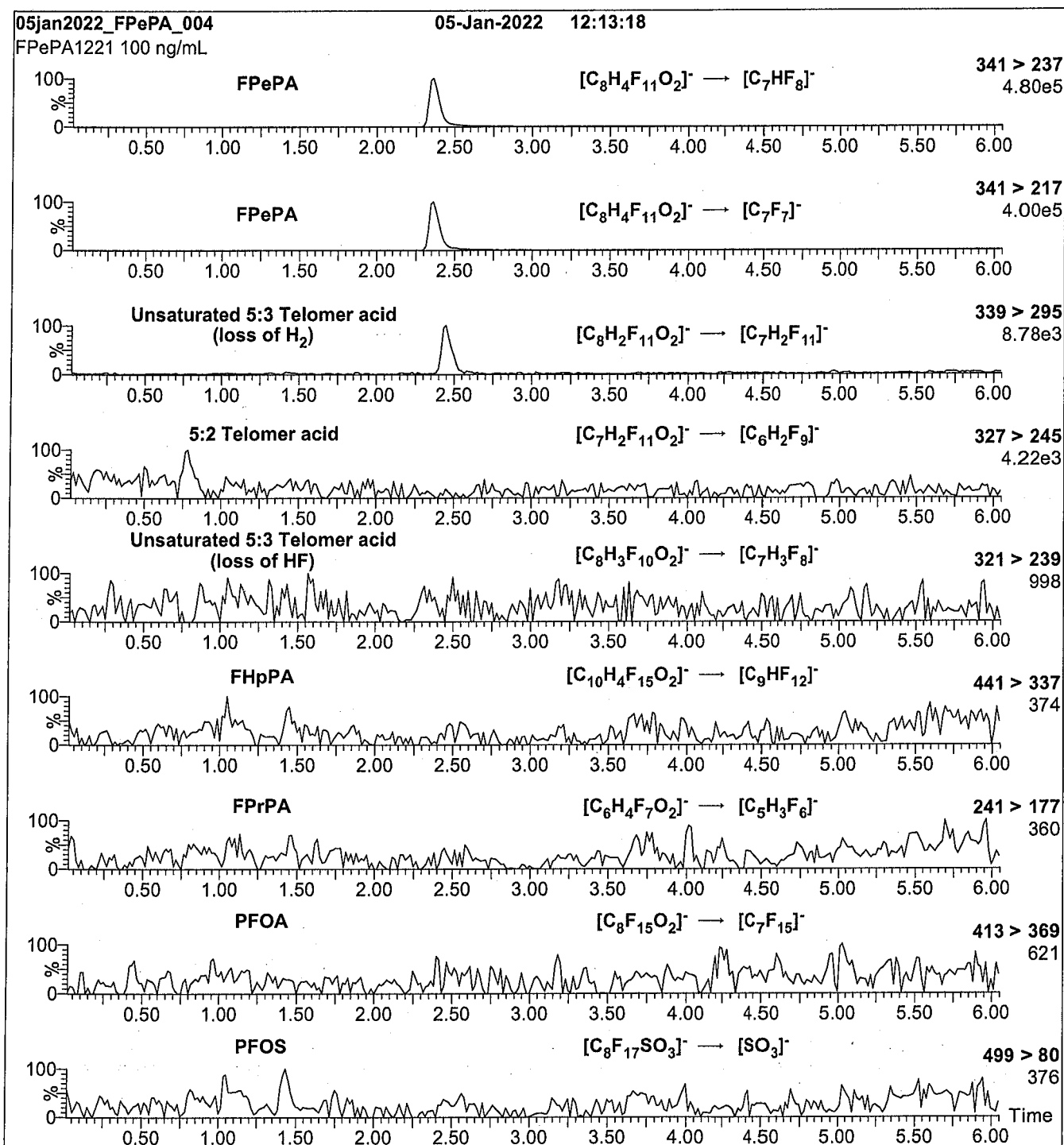
Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 3 min before returning to initial conditions in 0.75 min.
 Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

Injection: On-column (FPePA)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.09e-3
Collision Energy (eV) = 10

Analytical Standard Record

22C0309

Description:	PFAS - SAS FPePA 50ug/mL	Expires:	01/05/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS1221)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

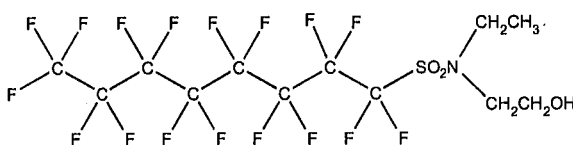
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol **22C0310**
STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: C₁₂H₁₀F₁₇NO₃S **MOLECULAR WEIGHT:** 571.25
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)
 09/23/2021 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 09/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 10/20/2021
 (mm/dd/yyyy)

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

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LIMITED WARRANTY:

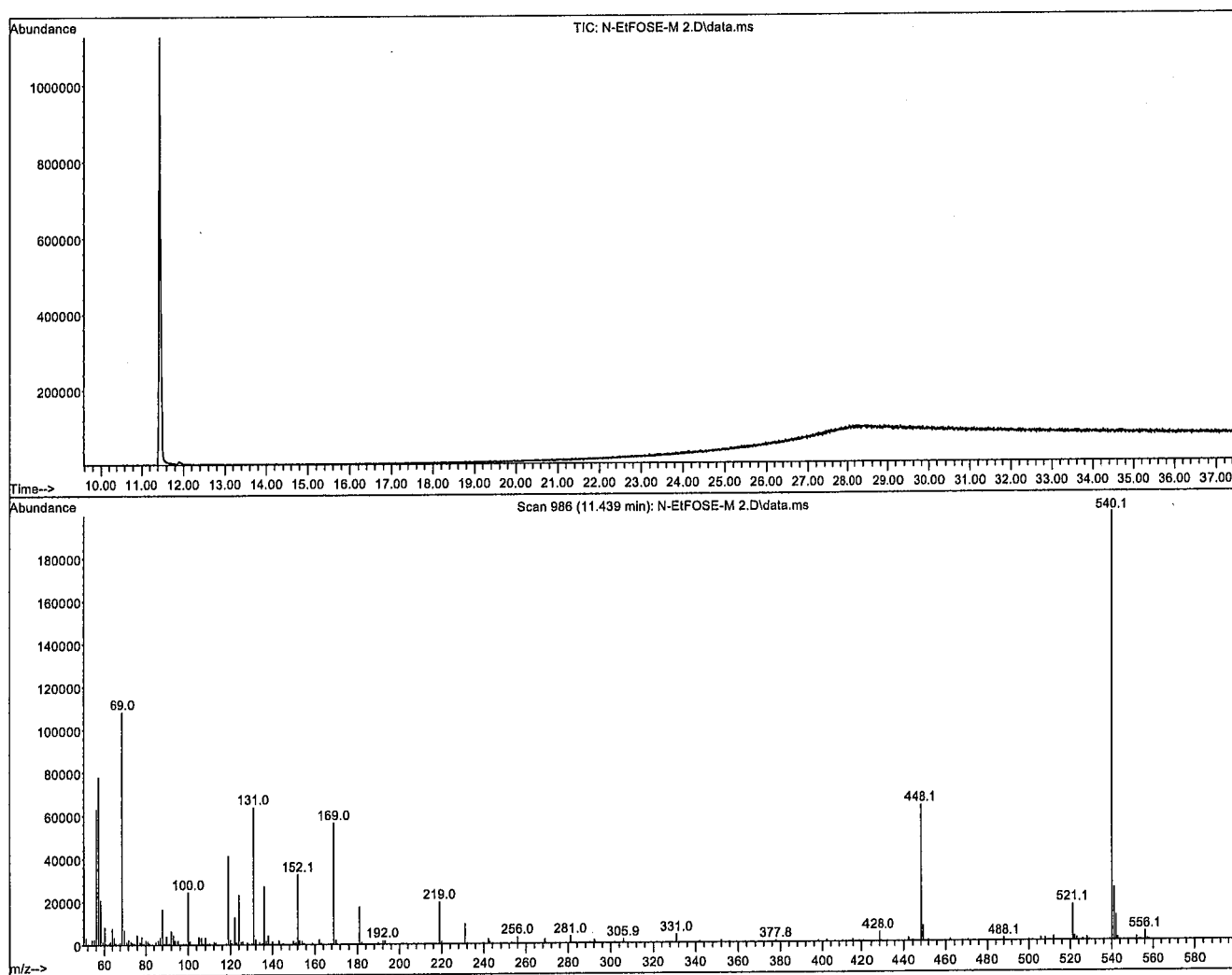
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QUALITY MANAGEMENT:

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

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

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

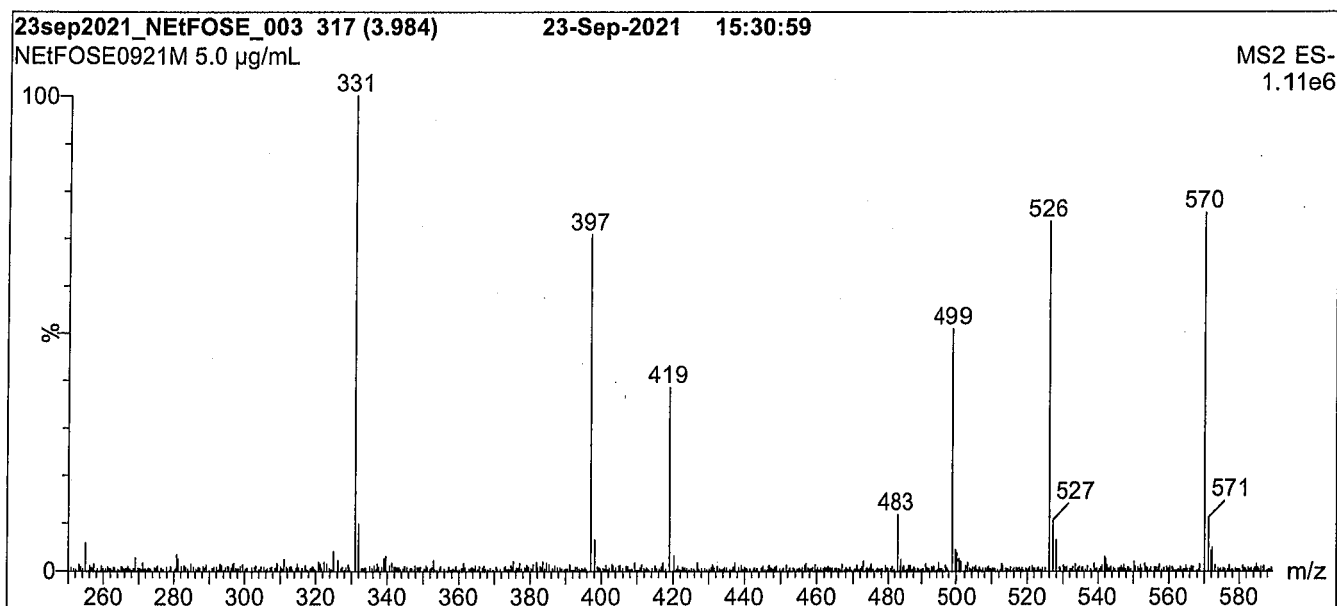
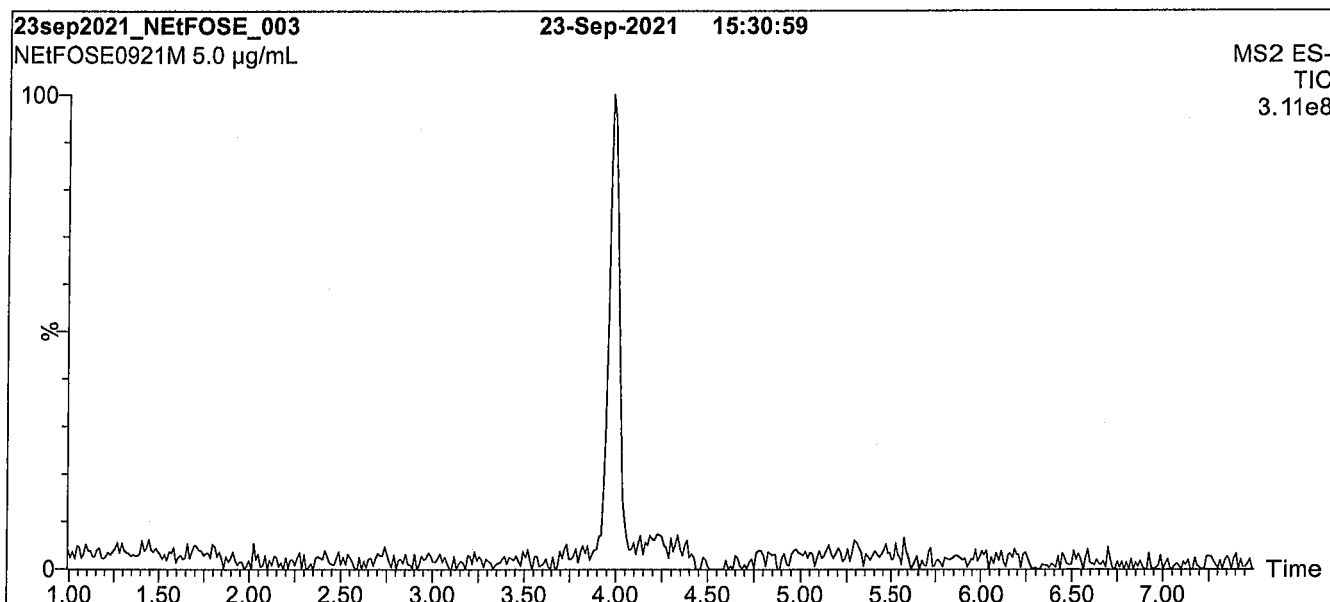
Flow: Constant at 1 mL/min

Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)
 10°C/min to 325°C
 325°C (10 min)

Ionization: EI+

Detector: 230°C
 Full Scan (50-1000 amu)

Figure 2: N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 2:**

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

Chromatographic Conditions:

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

Mobile phase: Gradient

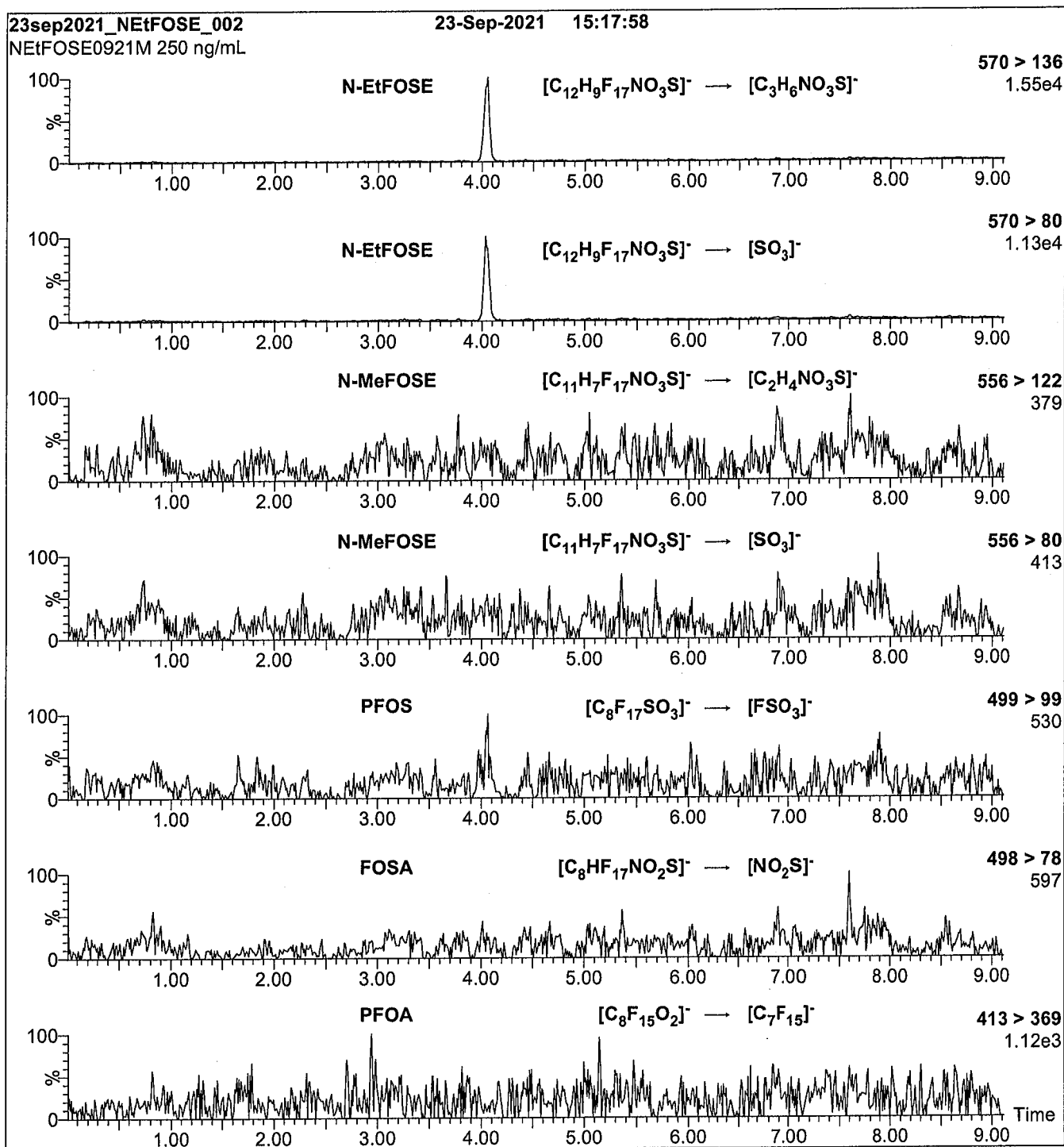
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 3:**

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

Mobile phase: Same as Figure 2

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

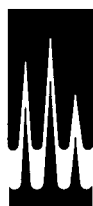
Collision Energy (eV) = 32

Analytical Standard Record

22C0310

Description:	PFAS - SAS NETFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NETFOSE0921M)
Final Volume (mls):	1	Department:	NETFOSE0921M)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

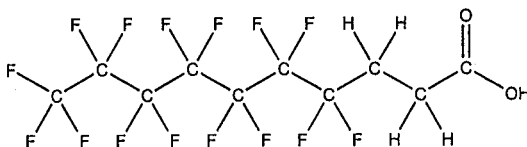
Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHpPA **LOT NUMBER:** FHpPA1020
COMPOUND: 3-Perfluoroheptyl propanoic acid **22C0311**
STRUCTURE: **CAS #:** 812-70-4



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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 11/27/2020
(mm/dd/yyyy)
B.G. Chittim, General Manager

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

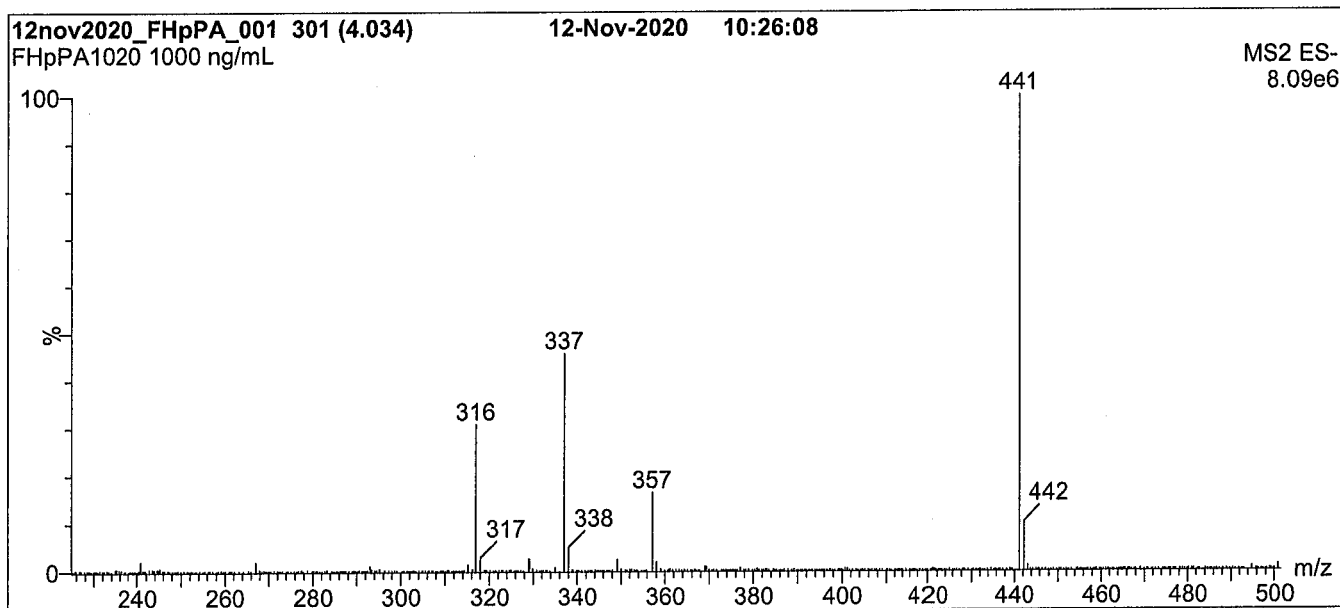
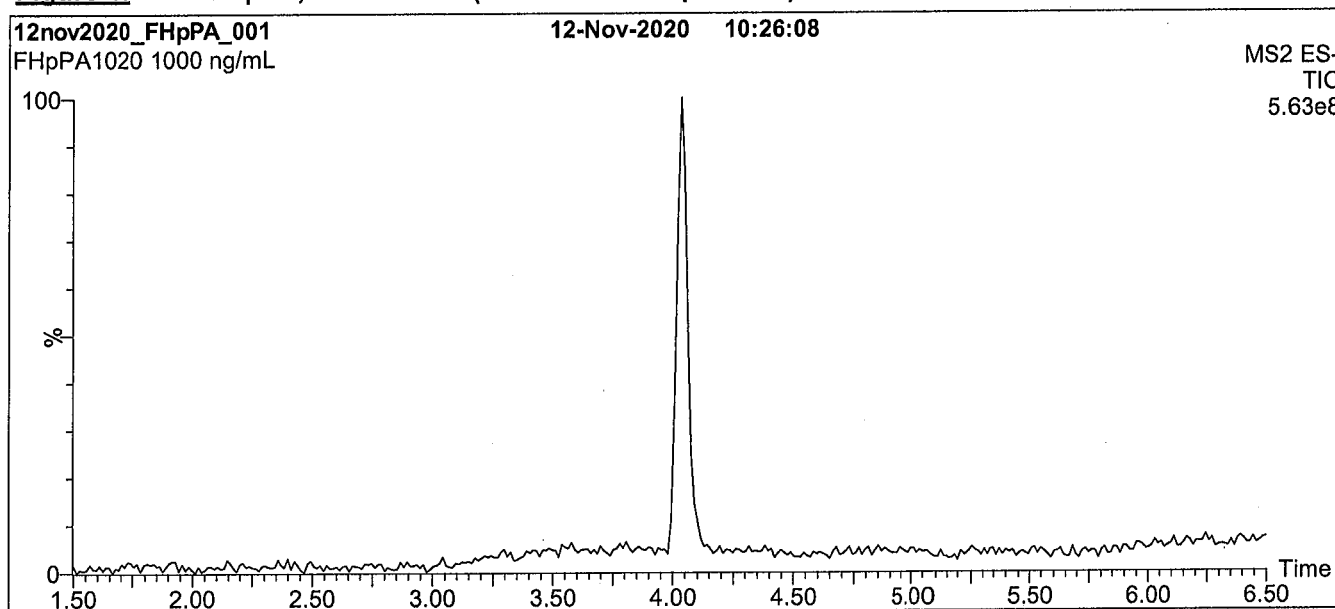
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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-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)

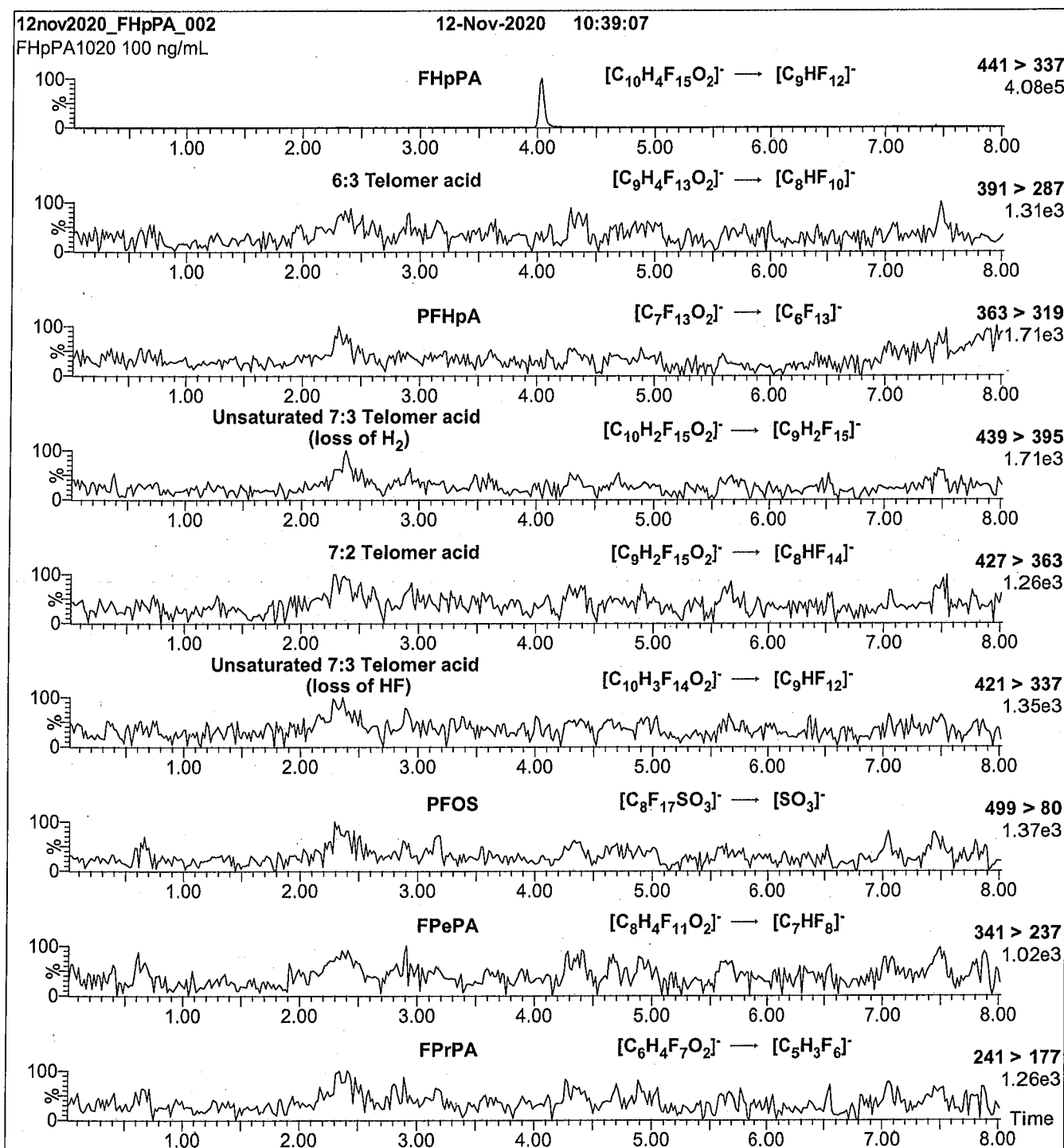
Source: Electrospray (negative)

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#: FHpPA1020)
Final Volume (mls):	1	Department:	FHpPA
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

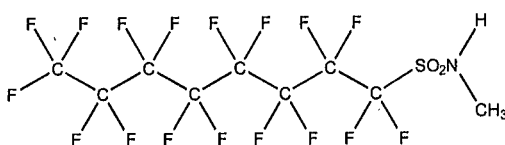
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M **LOT NUMBER:** NMeFOSA0721M
COMPOUND: N-methylperfluoro-1-octanesulfonamide 22C0312
STRUCTURE: **CAS #:** 31506-32-8



MOLECULAR FORMULA: C₉H₄F₁₇NO₂S **MOLECULAR WEIGHT:** 513.17
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____

B.G. Chittim, General Manager

Date: 08/04/2021
 (mm/dd/yyyy)

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

INTENDED USE:

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:

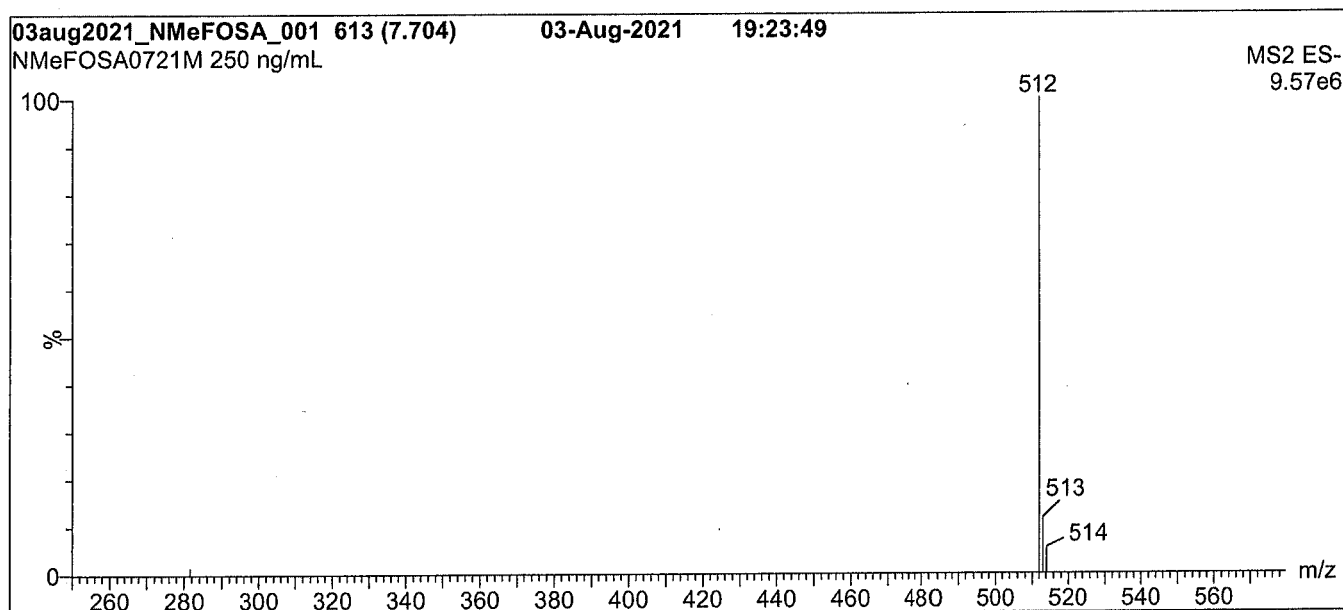
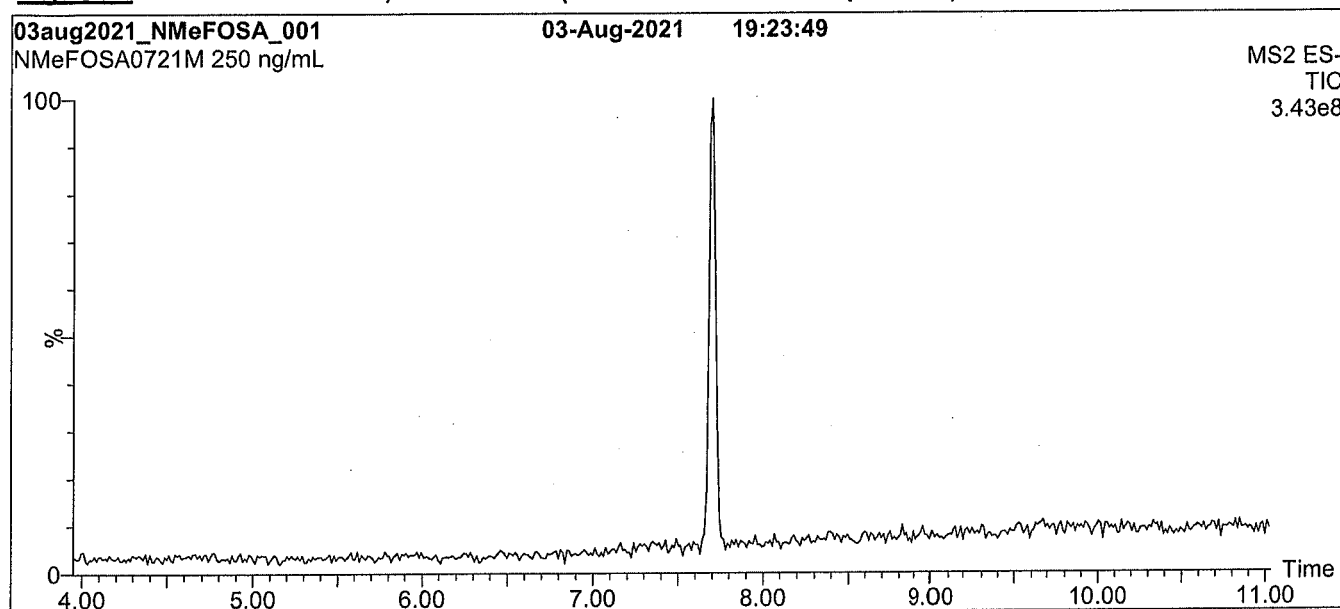
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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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

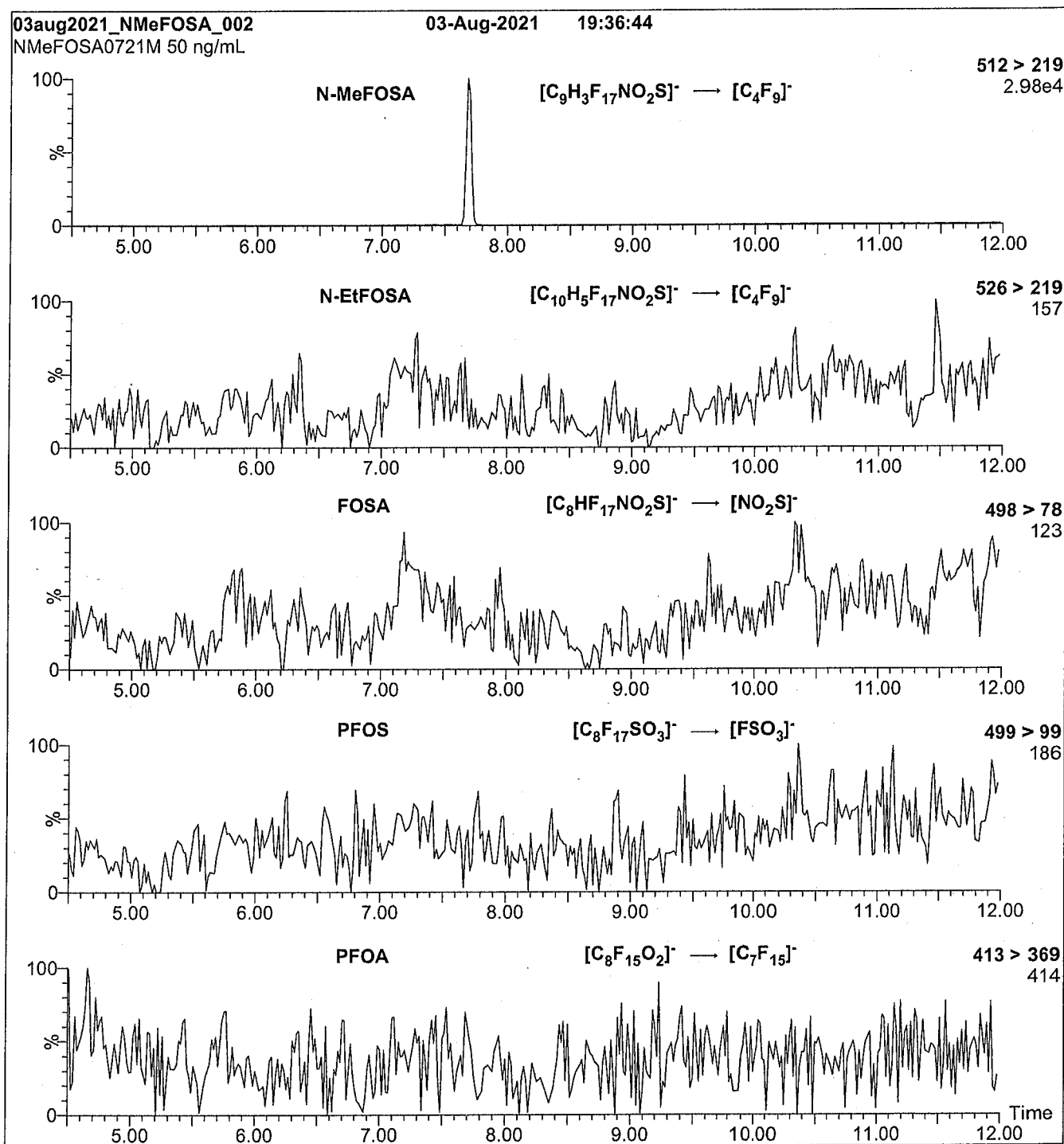
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

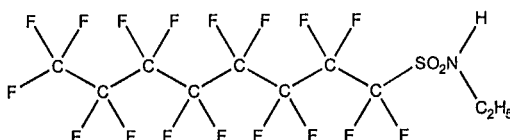
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



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: $C_{10}H_6F_{17}NO_2S$ **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.

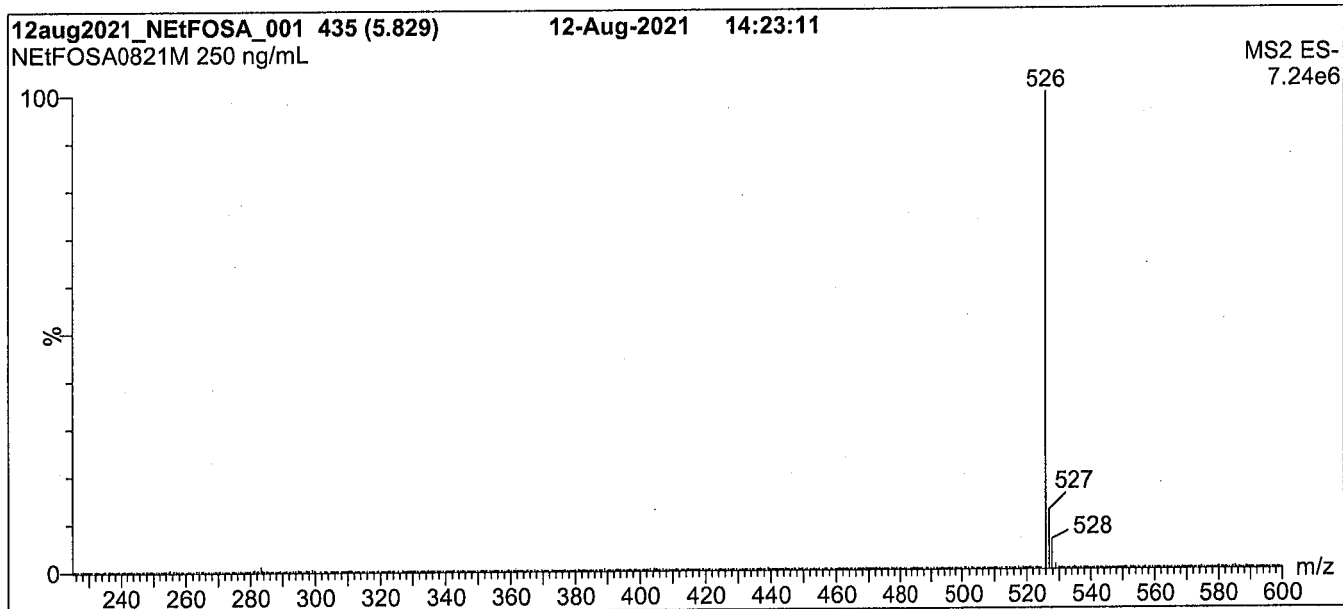
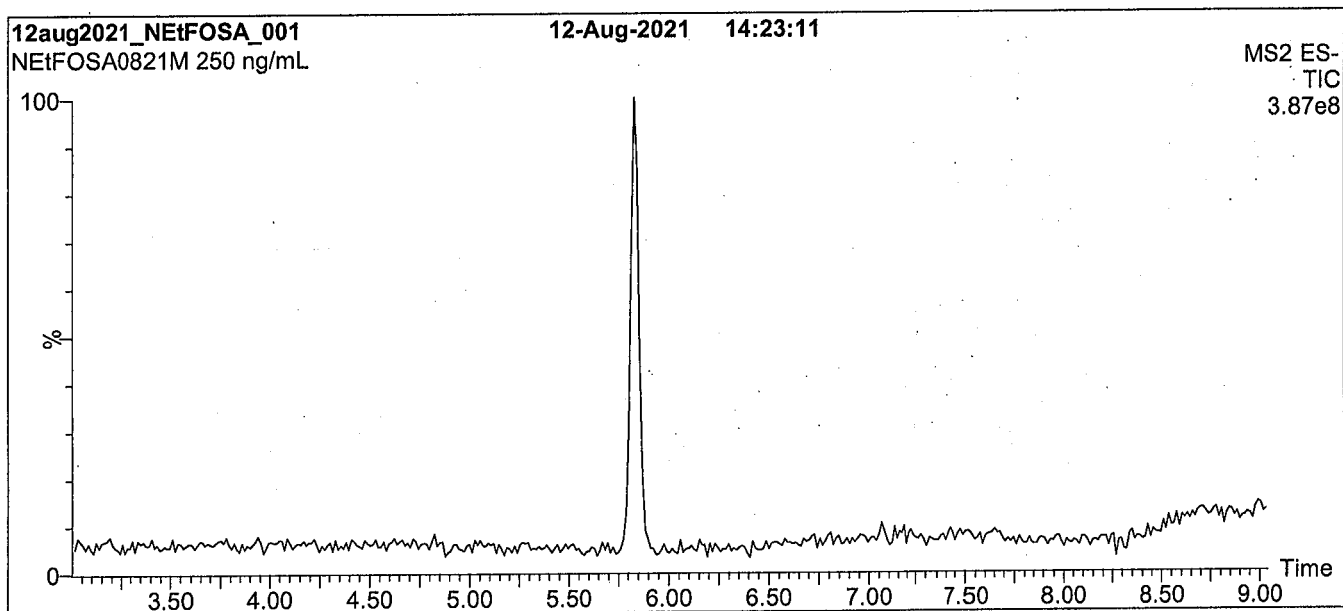
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Certified By: _____

B.G. Chittim, General Manager

Date: 08/16/2021
(mm/dd/yyyy)

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

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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

Analytical Standard Record

22C0313

Description:	PFAS - SAS NETFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Other	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NETFOSA0821M)
Final Volume (mls):	1	Department:	NETFOSA
Vials:	1	Last Edit:	08/17/2022 10:49 by LYA

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



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF 22F0058

**Native Replacement PFAS
Solution/Mixture**

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

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
 Figure 1: LC/MS Data (SIR)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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

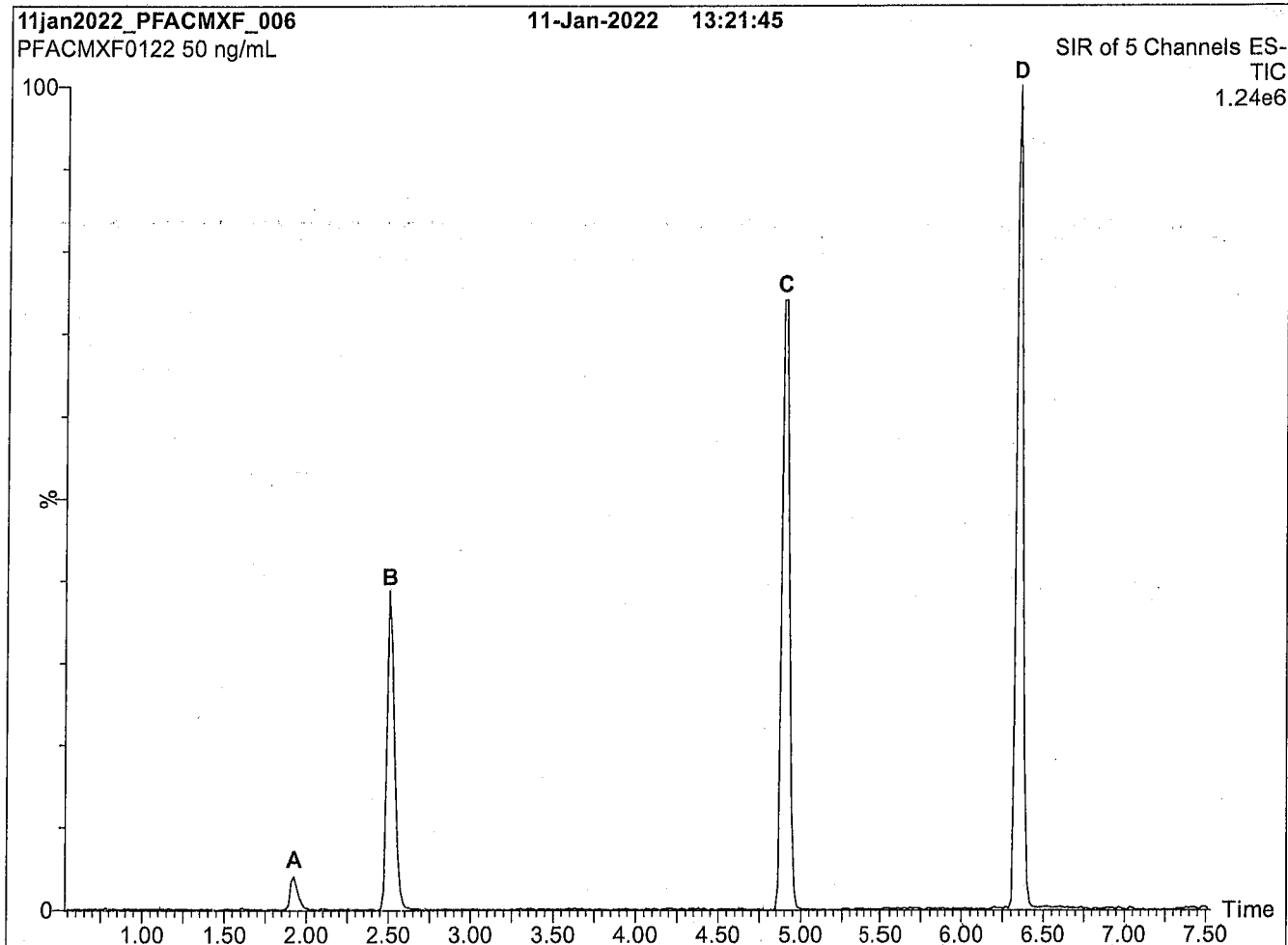
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	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

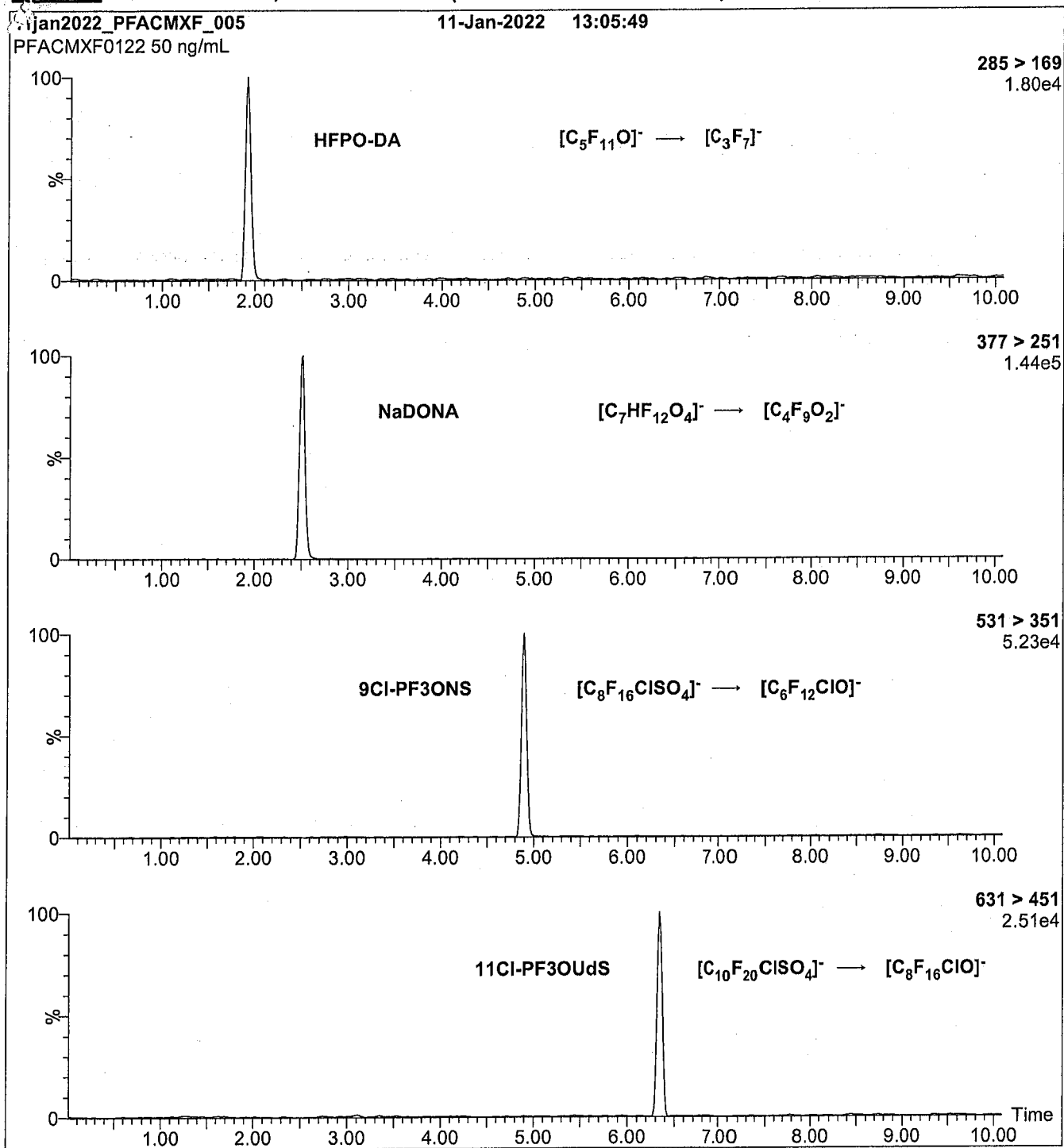
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

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

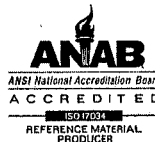
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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-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.

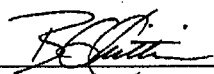
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^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**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{C}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.

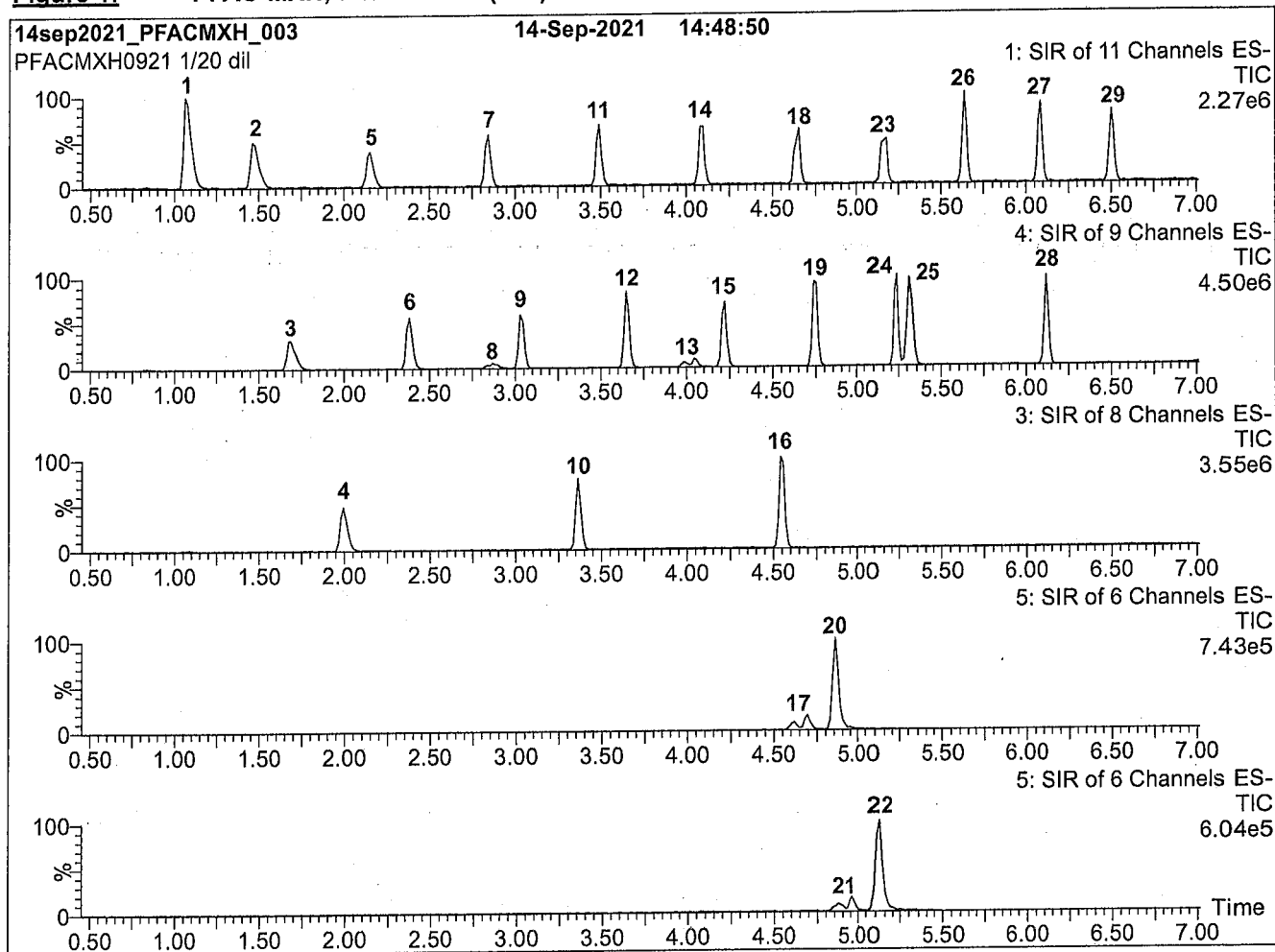
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

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

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF(SO ₃ ⁻)K ⁺ CF ₃	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF(CF ₃)SO ₃ ⁻ K ⁺ CF ₃	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF(CF ₃)CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CCF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ CCF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.07	

* Percent of total perfluorooctanesulfonate isomers only.

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

Figure 1: PFAC-MXH; LC/MS Data (SIR)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

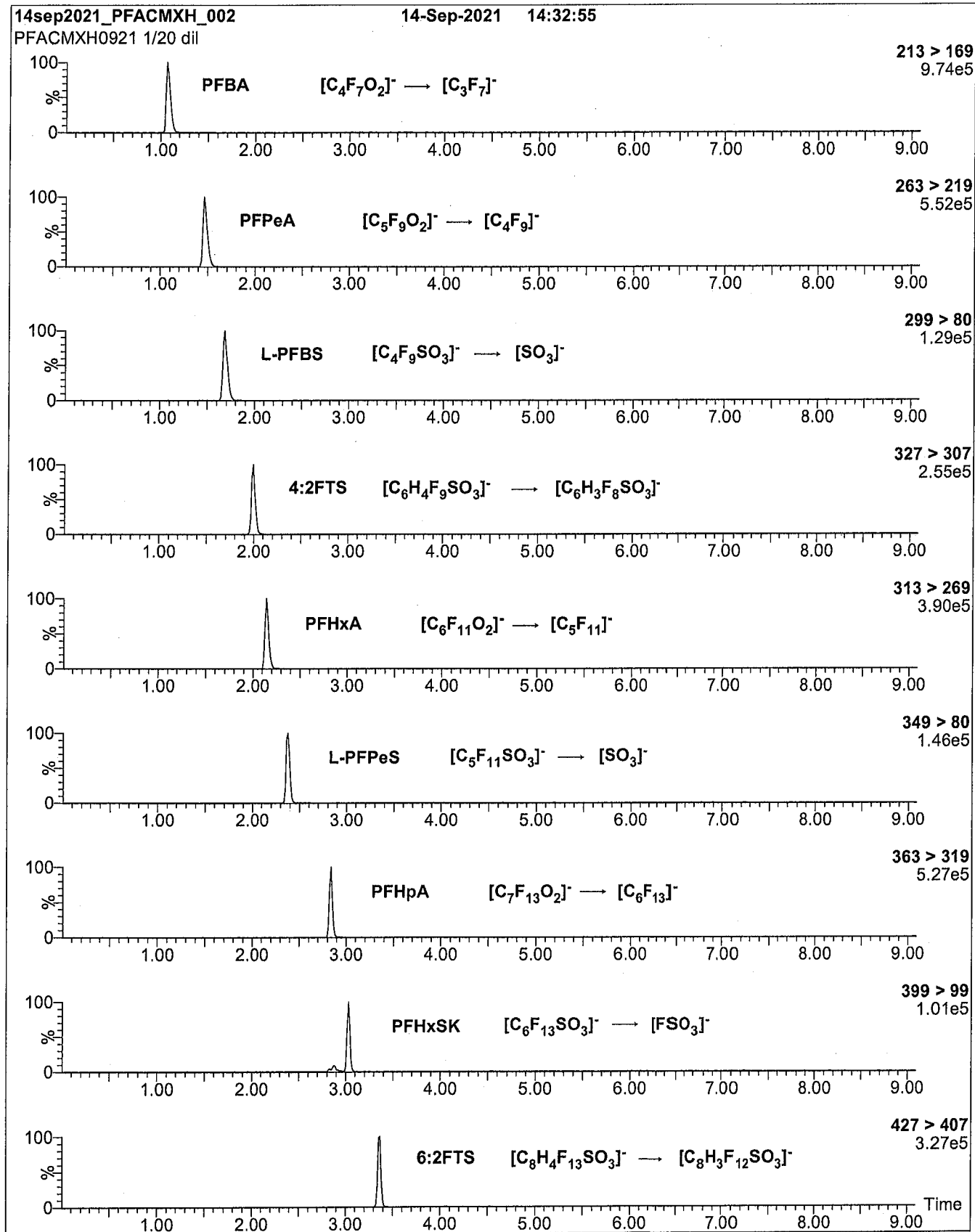
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

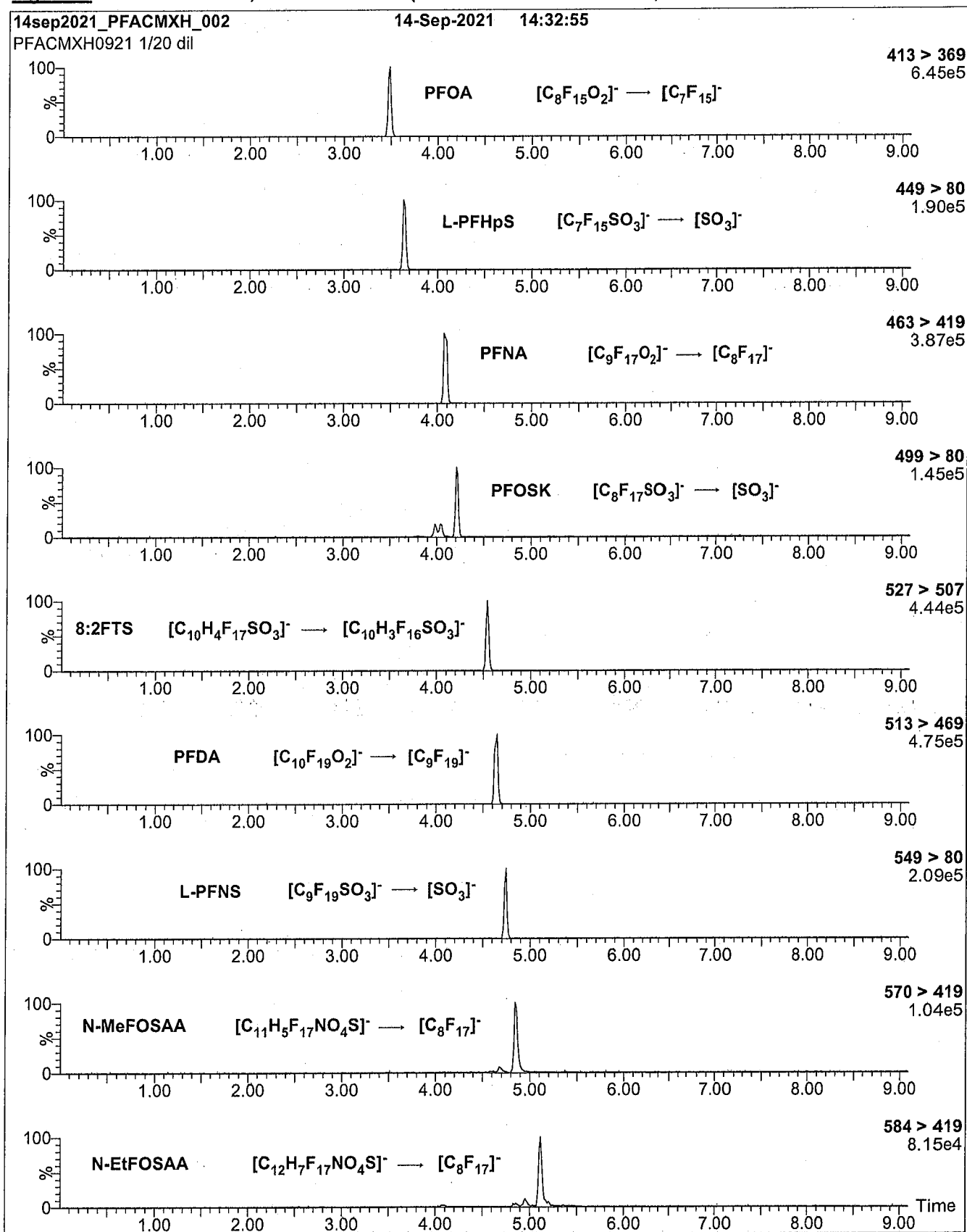
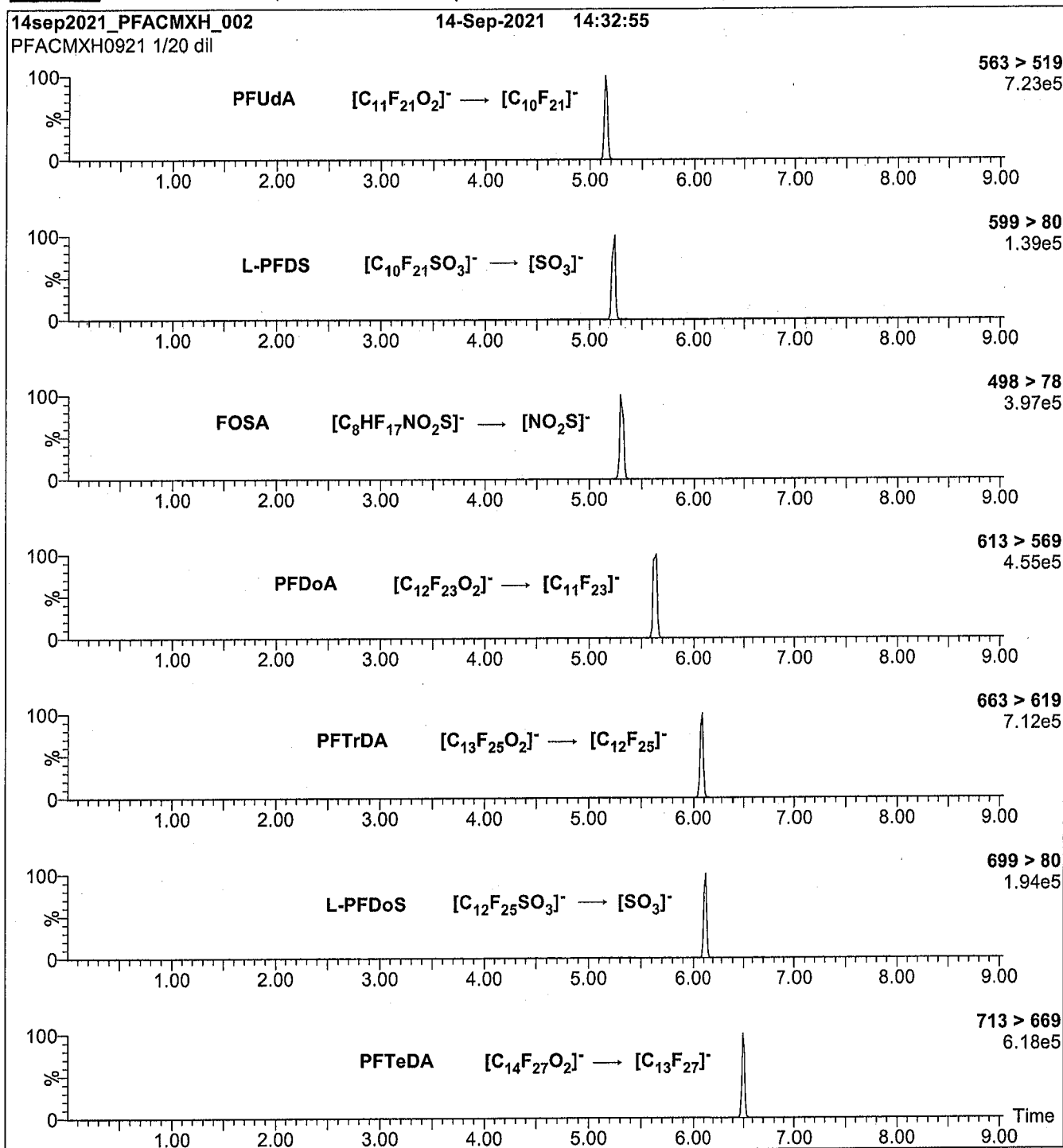
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

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**

PRODUCT CODE: PFAC-MXG
LOT NUMBER: PFACMXG0222
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 02/07/2022
LAST TESTED: (mm/dd/yyyy) 02/22/2022
EXPIRY DATE: (mm/dd/yyyy) 02/22/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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



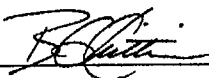
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

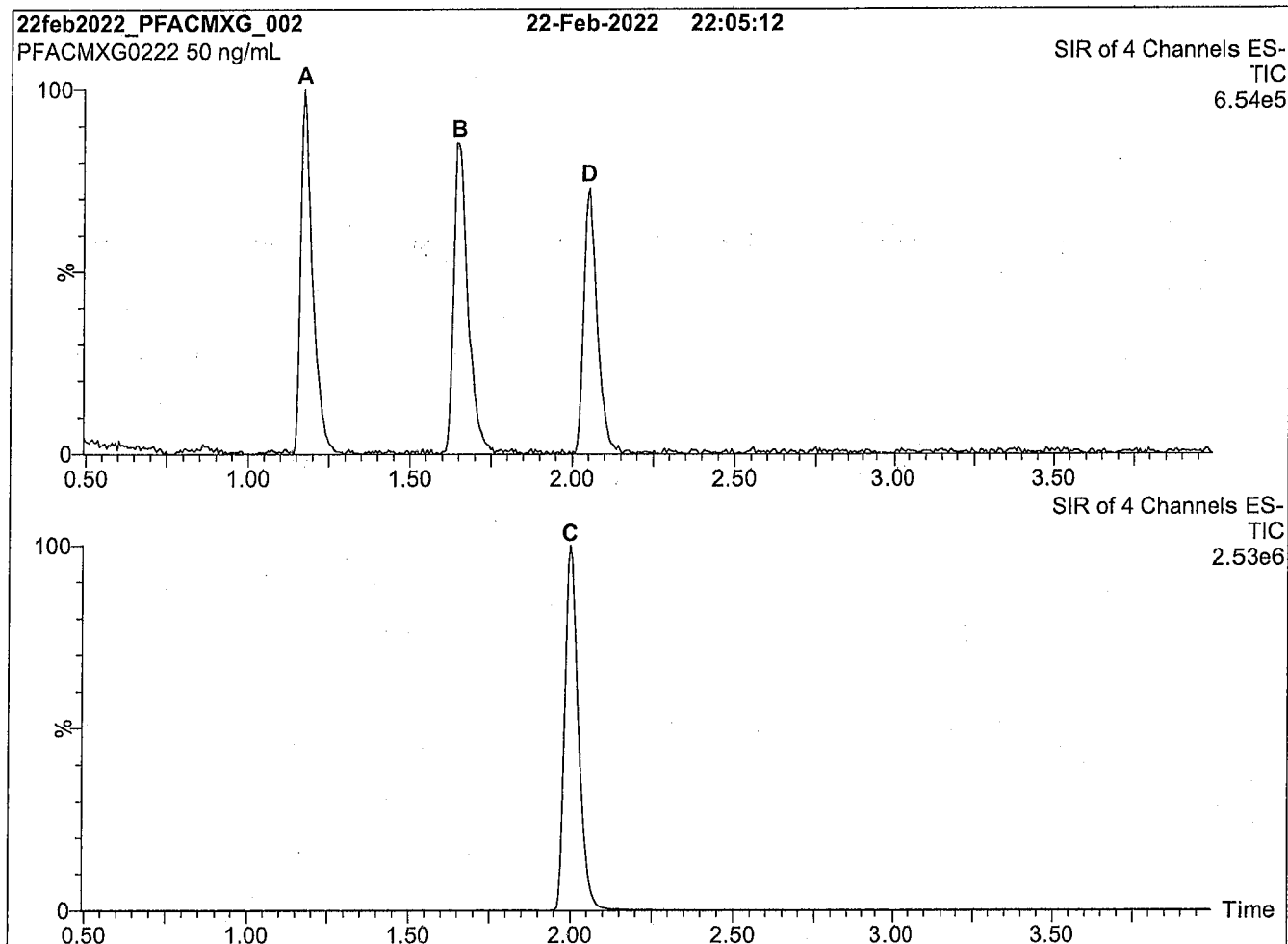
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____


B.G. Chittim, General Manager

Date: 03/03/2022
(mm/dd/yyyy)

Figure 1: PFAC-MXG; LC/MS Data (SIR)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

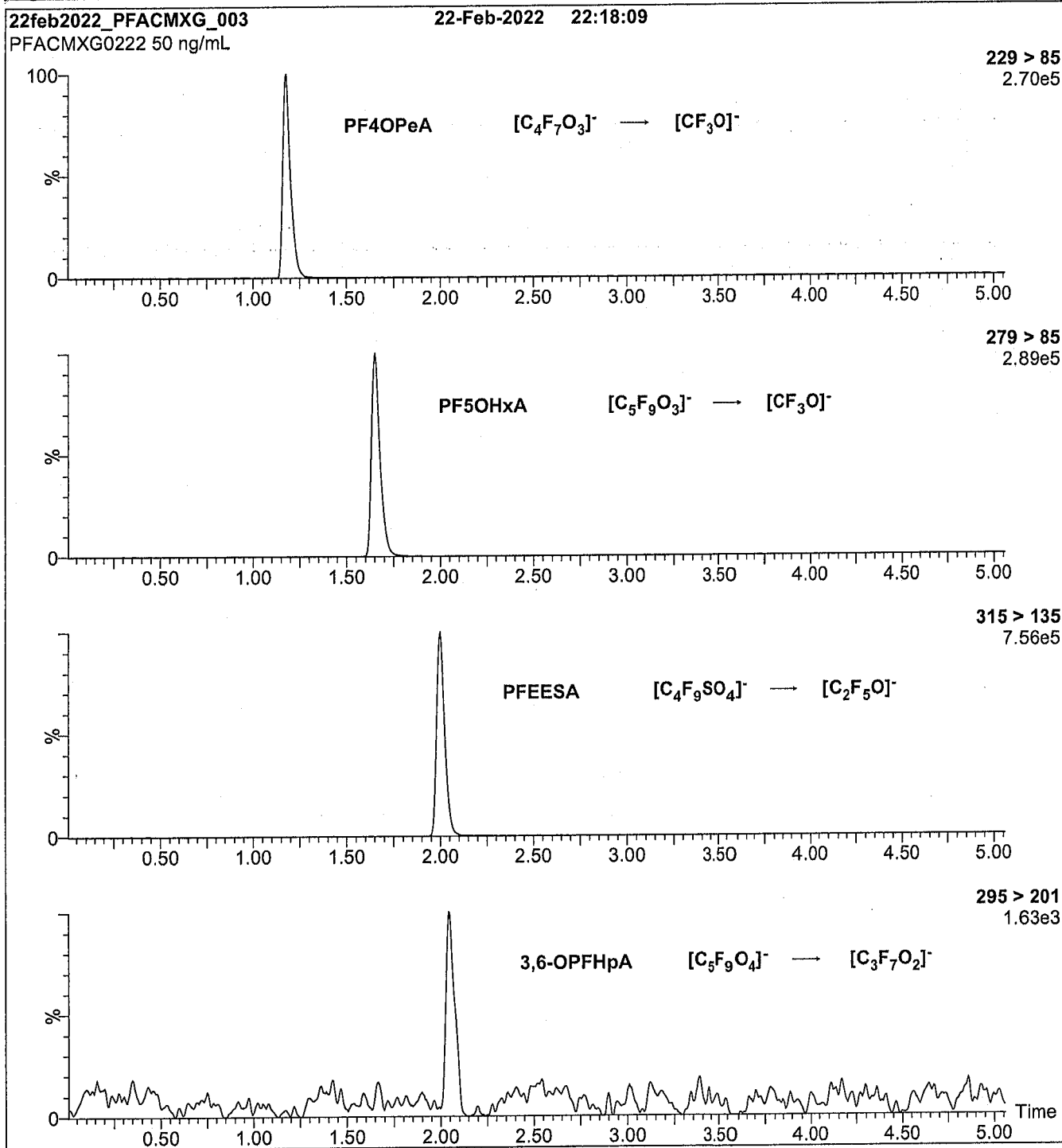
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = variable (15-35)
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (PFAC-MXG)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 8-48 (variable)

Analytical Standard Record

22F0061

Description:	PFAS - MIX MXG 2ug/mL	Expires:	02/22/2027
Standard Type:	Other	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG
Comments:	contains NFDHA PFMBA PFMPA PFEESA @ 2ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
NFDHA		151772-58-6	2	ug/mL
PFEESA		113507-82-7	1.78	ug/mL
PFMBA		863090-89-5	2	ug/mL
PFMPA		377-73-1	2	ug/mL

Analytical Standard Record

22F0445

Description:	TDCA 1000ug/mL	Expires:	09/19/2023
Standard Type:	Other	Prepared:	01/12/2022
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	11/14/2022 14:31 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID	22A0123	516-50-7	1000	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0123	PFAS Taurodeoxycholic Acid, Sodium Salt neat	10/09/2021	Calbiochem	3761825	09/30/2023	06/22/2022 13:01 by DAG	25000

Analytical Standard Record

22F0446

Description:	TCDA 100ug/mL	Expires:	09/19/2023
Standard Type:	Other	Prepared:	01/13/2022
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	3	Department:	PFAS
Vials:	1	Last Edit:	06/22/2022 13:05 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID	22F0445	516-50-7	100	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22F0445	TCDA 1000ug/mL	01/12/2022	Calbiochem	3761825	09/19/2023	06/22/2022 13:05 by DAG	0.3

Analytical Standard Record

22I0153

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	09/13/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE	22C0307	24448-09-7	0.8	ug/mL
3:3FTCA	22C0308	113507-82-7	0.8	ug/mL
5:3FTCA	22C0309	914637-49-3	0.8	ug/mL
NEtFOSE	22C0310	1691-99-2	0.8	ug/mL
7:3FTCA	22C0311	812-70-4	0.8	ug/mL
NMeFOSA	22C0312	31506-32-8	0.8	ug/mL
NEtFOSA	22C0313	4151-50-2	0.8	ug/mL
11CL-PF3OUDS	22F0058	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22F0058	756426-58-1	0.374	ug/mL
ADONA	22F0058	919005-14-4	0.378	ug/mL
HFPO-DA	22F0058	13252-13-6	0.4	ug/mL
4:2FTS	22F0059	757124-72-4	0.75	ug/mL
6:2FTS	22F0059	27619-97-2	0.76	ug/mL
8:2FTS	22F0059	39108-34-4	0.768	ug/mL
NEtFOSAA	22F0059	2991-50-6	0.2	ug/mL
NMeFOSAA	22F0059	2355-31-9	0.2	ug/mL
PFBA	22F0059	375-22-4	0.8	ug/mL
PFBS	22F0059	375-73-5	0.177	ug/mL
PFDA	22F0059	335-76-2	0.2	ug/mL
PFDOA	22F0059	307-55-1	0.2	ug/mL
PFDOS	22F0059	79780-39-5	0.194	ug/mL
PFDS	22F0059	335-77-3	0.193	ug/mL
PFHPA	22F0059	375-85-9	0.2	ug/mL
PFHPS	22F0059	375-92-8	0.191	ug/mL
PFHXA	22F0059	307-24-4	0.2	ug/mL
PFHXS	22F0059	355-46-4	0.183	ug/mL
PFNA	22F0059	375-95-1	0.2	ug/mL
PFNS	22F0059	68259-12-1	0.192	ug/mL
PFOA	22F0059	335-67-1	0.2	ug/mL
PFOS	22F0059	1763-23-1	0.186	ug/mL
PFOSA	22F0059	754-91-6	0.2	ug/mL
PFPEA	22F0059	2706-90-3	0.4	ug/mL
PFPEs	22F0059	630402-22-1	0.188	ug/mL
PFTEDA	22F0059	376-06-7	0.2	ug/mL
PFTRDA	22F0059	72629-94-8	0.2	ug/mL
PFUnA	22F0059	2058-94-8	0.2	ug/mL
NFDHA	22F0061	151772-58-6	0.4	ug/mL
PFEESA	22F0061	113507-82-7	0.356	ug/mL
PFMBA	22F0061	863090-89-5	0.4	ug/mL
PFMPA	22F0061	377-73-1	0.4	ug/mL

Analytical Standard Record

22I0153

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22C0307	PFAS - SAS N-MeFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0308	PFAS - SAS FPrPA 50ug/mL	03/15/2022	Wellington Laboratories	FPrPA0122	02/03/2027	03/15/2022 15:59	by DAG	0.096
22C0309	PFAS - SAS FPePA 50ug/mL	03/15/2022	Wellington Laboratories	FPePA1221	01/05/2027	03/15/2022 15:59	by DAG	0.096
22C0310	PFAS - SAS NEtFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0311	PFAS - SAS FHpPA 50ug/mL	03/15/2022	Wellington Laboratories	HHpPA1020	11/12/2025	03/15/2022 16:00	by DAG	0.096
22C0312	PFAS - SAS NMeFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSA0721M	08/03/2026	03/15/2022 16:00	by DAG	0.096
22C0313	PFAS - SAS NEtFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSA0821M	08/12/2026	08/17/2022 10:49	by LYA	0.096
22F0058	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	09/15/2022 09:32	by DAG	1.2
22F0059	PFAS - MIX MXH 2ug/mL	09/09/2021	Wellington Laboratories	PFACMXH0921	09/14/2026	09/15/2022 09:33	by DAG	1.2
22F0061	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	09/15/2022 09:34	by DAG	1.2

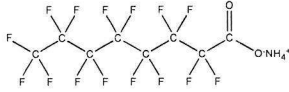
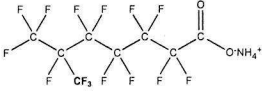
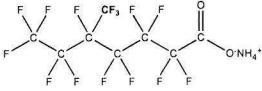
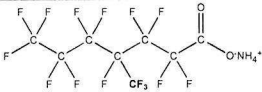
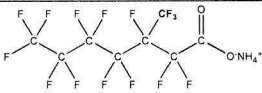
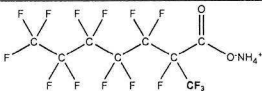
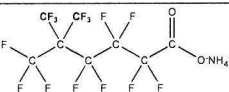
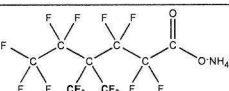
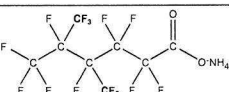
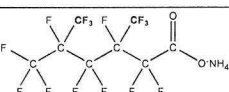
Analytical Standard Record

22J0297

Description:	T-PFOA	Expires:	01/27/2027
Standard Type:	Other	Prepared:	01/27/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFOA0122)
Vials:	1	Last Edit:	10/18/2022 12:59 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOA		335-67-1	50	ug/mL

Table A: T-PFOA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	Ammonium perfluoro-n-octanoate		79
2	Ammonium 6-trifluoromethylperfluoroheptanoate		9.0
3	Ammonium 5-trifluoromethylperfluoroheptanoate		4.5
4	Ammonium 4-trifluoromethylperfluoroheptanoate		4.0
5	Ammonium 3-trifluoromethylperfluoroheptanoate		3.0
6	Ammonium 2-trifluoromethylperfluoroheptanoate		
7	Ammonium 5,5-bis(trifluoromethyl)perfluorohexanoate		
8	Ammonium 4,4-bis(trifluoromethyl)perfluorohexanoate		0.50
9	Ammonium 4,5-bis(trifluoromethyl)perfluorohexanoate		
10	Ammonium 3,5-bis(trifluoromethyl)perfluorohexanoate		

* Percent Composition was determined by ¹⁹F-NMR. The percentages displayed are of total ammonium perfluorooctanoate isomers only (isomers are labelled in Figure 4).

Analytical Standard Record

22J0298

Description:	br-FOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	09/14/2022
Solvent:	Isopropanol	Prepared By:	Wellington Laboratories (Lot#: PFOSA0922)
Final Volume (mls):	1	Department:	PFOSA
Vials:	1	Last Edit:	10/18/2022 13:03 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOSA		754-91-6	50	ug/mL



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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-FOSA

Perfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-FOSA
<u>LOT NUMBER:</u>	brFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Isopropanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/14/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 754-91-6 (for linear isomer).

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Table A: br-FOSA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	Perfluoro-1-octanesulfonamide	CF ₃ (CF ₂) ₇ SO ₂ NH ₂	66.6
2	Perfluoro-1-methyl-1-heptanesulfonamide**	CF ₃ (CF ₂) ₅ CF(SO ₂ NH ₂) CF ₃	0.8
3	Perfluoro-2-methyl-1-heptanesulfonamide	CF ₃ (CF ₂) ₄ CF(CF ₃)SO ₂ NH ₂ CF ₃	0.3
4	Perfluoro-3-methyl-1-heptanesulfonamide	CF ₃ (CF ₂) ₃ CF(CF ₃) ₂ SO ₂ NH ₂ CF ₃	4.2
5	Perfluoro-4-methyl-1-heptanesulfonamide	CF ₃ (CF ₂) ₂ CF(CF ₃) ₂ SO ₂ NH ₂ CF ₃	3.5
6	Perfluoro-5-methyl-1-heptanesulfonamide	CF ₃ CF ₂ CF(CF ₃) ₄ SO ₂ NH ₂ CF ₃	7.8
7	Perfluoro-6-methyl-1-heptanesulfonamide	CF ₃ CF(CF ₃) ₅ SO ₂ NH ₂ CF ₃	16.8
8	Perfluoro-5,5-dimethyl-1-hexanesulfonamide	CF ₃ CF ₃ C(CF ₃) ₄ SO ₂ NH ₂ CF ₃	0.2

* Percent of total perfluorooctanesulfonamide isomers only.

** Systematic Name: Perfluoro-2-octanesulfonamide.

Certified By: 
B.G. Chittim, General Manager

Date: 11/15/2022
(mm/dd/yyyy)

Analytical Standard Record

22J0298

Description:	br-FOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	09/14/2022
Solvent:	Isopropanol	Prepared By:	Wellington Laboratories (Lot#: PFOSA0922)
Final Volume (mls):	1	Department:	PFOSA
Vials:	1	Last Edit:	10/18/2022 13:03 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOSA		754-91-6	50	ug/mL

Analytical Standard Record

22J0301

Description:	br-NMeFOSA	Expires:	08/23/2027
Standard Type:	Other	Prepared:	08/23/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSA0822)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:37 by HGH

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



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide
Isomeric Mix

<u>PRODUCT CODE:</u>	br-NMeFOSA
<u>LOT NUMBER:</u>	brNMeFOSA0822
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/18/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/23/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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Analytical Standard Record

22J0301

Description:	br-NMeFOSA	Expires:	08/23/2027
Standard Type:	Other	Prepared:	08/23/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSA0822)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:37 by HGH

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

Analytical Standard Record

22J0302

Description:	br-NETFOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOSA0922)
Final Volume (mls):	1	Department:	PPAS
Vials:	1	Last Edit:	10/18/2022 13:38 by HGH

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



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide
Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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Table A: br-NEtFOSA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	N-Ethylperfluoro-1-octanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NH} \\ \\ \text{CH}_2\text{CH}_3 \end{array}$	73.8
2	N-Ethylperfluoro-1-methyl-1-heptanesulfonamide**	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_5\text{CF}\text{SO}_2\text{NH} \\ \quad \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	0.1
3	N-Ethylperfluoro-3-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NH} \\ \quad \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	2.3
4	N-Ethylperfluoro-4-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NH} \\ \quad \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	2.6
5	N-Ethylperfluoro-5-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NH} \\ \quad \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	6.2
6	N-Ethylperfluoro-6-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NH} \\ \quad \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	14.8
7	N-Ethylperfluoro-5,5-dimethyl-1-hexanesulfonamide	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NH} \\ \quad \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	0.2

* Percent of total N-ethylperfluorooctanesulfonamide isomers only.

** Systematic Name: N-Ethylperfluoro-2-octanesulfonamide.

Certified By: 
B.G. Chittim, General Manager

Date: 11/15/2022
(mm/dd/yyyy)

Analytical Standard Record

22J0303

Description:	br-NMeFOSE	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSE0922)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:41 by HGH

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



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSE

**2-(N-Methylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NMeFOSE
<u>LOT NUMBER:</u>	brNMeFOSE0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/02/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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Table A: br-NMeFOSE; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	2-(N-Methylperfluoro-1-octanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad $ $\quad \quad \quad \text{CH}_3$	67.6
2	2-(N-Methylperfluoro-3-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	3.9
3	2-(N-Methylperfluoro-4-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	3.2
4	2-(N-Methylperfluoro-5-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	7.7
5	2-(N-Methylperfluoro-6-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	17.5
6	2-(N-Methylperfluoro-5,5-dimethyl-1-hexanesulfonamido)ethanol	CF_3 $ $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $ \quad \quad \quad $ $\text{CF}_3 \quad \quad \quad \text{CH}_3$	0.2

* Percent of total 2-(N-methylperfluorooctanesulfonamido)ethanol isomers only.

Certified By: _____

B.G. Chittim, General Manager

Date: 11/14/2022

(mm/dd/yyyy)

Analytical Standard Record

22J0304

Description:	br-NETFOSE	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOSE1022)
Final Volume (mls):	1	Department:	NETFOSE
Vials:	1	Last Edit:	10/18/2022 13:43 by HGH

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



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSE

2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSE
<u>LOT NUMBER:</u>	brNEtFOSE1022
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/12/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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Table A: br-NEtFOSE; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	2-(N-Ethylperfluoro-1-octanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad $ $\quad \quad \quad \text{CH}_2\text{CH}_3$	64.6
2	2-(N-Ethylperfluoro-2-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_4\text{CF}(\text{CF}_2)\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	0.2
3	2-(N-Ethylperfluoro-3-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	4.1
4	2-(N-Ethylperfluoro-4-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	4.3
5	2-(N-Ethylperfluoro-5-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	8.8
6	2-(N-Ethylperfluoro-6-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	17.8
7	2-(N-Ethylperfluoro-5,5-dimethyl-1-hexanesulfonamido)ethanol	CF_3 $ $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $ \quad \quad \quad $ $\text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	0.3

* Percent of total 2-(N-ethylperfluorooctanesulfonamido)ethanol isomers only.

Certified By: _____

B.G. Chittim, General Manager

Date: 11/14/2022

(mm/dd/yyyy)

Analytical Standard Record

22J0420

Description:	PFAS RES-MIX 1000ng/mL	Expires:	04/24/2023
Standard Type:	Other	Prepared:	10/26/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	10/26/2022 10:16 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOA	22J0297	335-67-1	1	ug/mL
PFOSA	22J0298	754-91-6	1	ug/mL
NMeFOSA	22J0301	31506-32-8	1	ug/mL
NEtFOSA	22J0302	4151-50-2	1	ug/mL
NMeFOSE	22J0303	24448-09-7	1	ug/mL
NEtFOSE	22J0304	1691-99-2	1	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22J0297	T-PFOA	01/27/2022	Wellington Laboratories	TPFOA0122	01/27/2027	10/18/2022 12:59	by HGH 0.02
22J0298	br-FOSA	09/14/2022	Wellington Laboratories	br-FOSA0922	10/07/2027	10/18/2022 13:03	by HGH 0.02
22J0301	br-NMeFOSA	08/23/2022	Wellington Laboratories	beNMeFOSA0822	08/23/2027	10/18/2022 13:37	by HGH 0.02
22J0302	br-NEtFOSA	10/07/2022	Wellington Laboratories	beNEtFOSA0922	10/07/2027	10/18/2022 13:38	by HGH 0.02
22J0303	br-NMeFOSE	10/07/2022	Wellington Laboratories	beNMeFOSE0922	10/07/2027	10/26/2022 10:16	by HGH 0.02
22J0304	br-NEtFOSE	10/07/2022	Wellington Laboratories	beNEtFOSE1022	10/07/2027	10/18/2022 13:43	by HGH 0.02

Analytical Standard Record

22J0448

Description:	PFAS - MIX 1633 20ng/mL	Expires:	04/25/2023
Standard Type:	Analyte Spike	Prepared:	10/27/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	10/27/2022 08:51 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	22I0153	763051-92-9	0.0378	ug/mL
3:3FTCA	22I0153	113507-82-7	0.08	ug/mL
4:2FTS	22I0153	757124-72-4	0.075	ug/mL
5:3FTCA	22I0153	914637-49-3	0.08	ug/mL
6:2FTS	22I0153	27619-97-2	0.076	ug/mL
7:3FTCA	22I0153	812-70-4	0.08	ug/mL
8:2FTS	22I0153	39108-34-4	0.0768	ug/mL
9CL-PF3ONS	22I0153	756426-58-1	0.0374	ug/mL
ADONA	22I0153	919005-14-4	0.0378	ug/mL
HFPO-DA	22I0153	13252-13-6	0.04	ug/mL
NETFOSA	22I0153	4151-50-2	0.08	ug/mL
NETFOSAA	22I0153	2991-50-6	0.02	ug/mL
NETFOSE	22I0153	1691-99-2	0.08	ug/mL
NFDHA	22I0153	151772-58-6	0.04	ug/mL
NMeFOSA	22I0153	31506-32-8	0.08	ug/mL
NMeFOSAA	22I0153	2355-31-9	0.02	ug/mL
NMeFOSE	22I0153	24448-09-7	0.08	ug/mL
PFBA	22I0153	375-22-4	0.08	ug/mL
PFBS	22I0153	375-73-5	0.0177	ug/mL
PFDA	22I0153	335-76-2	0.02	ug/mL
PFDOA	22I0153	307-55-1	0.02	ug/mL
PFDOS	22I0153	79780-39-5	0.0194	ug/mL
PFDS	22I0153	335-77-3	0.0193	ug/mL
PFEESA	22I0153	113507-82-7	0.0356	ug/mL
PFHPA	22I0153	375-85-9	0.02	ug/mL
PFHPS	22I0153	375-92-8	0.0191	ug/mL
PFHXA	22I0153	307-24-4	0.02	ug/mL
PFHXS	22I0153	355-46-4	0.0183	ug/mL
PFMBA	22I0153	863090-89-5	0.04	ug/mL
PFMPA	22I0153	377-73-1	0.04	ug/mL
PFNA	22I0153	375-95-1	0.02	ug/mL
PFNS	22I0153	68259-12-1	0.0192	ug/mL
PFOA	22I0153	335-67-1	0.02	ug/mL
PFOS	22I0153	1763-23-1	0.0186	ug/mL
PFOSA	22I0153	754-91-6	0.02	ug/mL
PFPEA	22I0153	2706-90-3	0.04	ug/mL
PFPEs	22I0153	630402-22-1	0.0188	ug/mL
PFTEDA	22I0153	376-06-7	0.02	ug/mL
PFTRDA	22I0153	72629-94-8	0.02	ug/mL
PFUnA	22I0153	2058-94-8	0.02	ug/mL

Analytical Standard Record

22J0448**Parent Standards used:**

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

23A0022

Description:	PFOS 0.4mg/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:14 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0024	1763-23-1	400	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0024	PFOS 40%	01/04/2023	Sigma-Aldrich	0000100807	11/10/2023	01/04/2023 11:14 by DAG	0.04

Analytical Standard Record

23A0024

Description:	PFOS 40%	Expires:	11/10/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	methanol 77283	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:14 by DAG
Comments:	neat-77283		

Analyte	Parent	CAS Number	Concentration	Units
PFOS		1763-23-1	400000	ug/g

Analytical Standard Record

23A0025

Description:	PFOS 0.4ug/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:18 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0022	1763-23-1	0.4	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0022	PFOS 0.4mg/ml	01/04/2023	In house	3761825	07/03/2023	01/04/2023 11:14 by DAG	0.04

Analytical Standard Record

23A0025

Description:	PFOS 0.4ug/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:18 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0022	1763-23-1	0.4	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0022	PFOS 0.4mg/ml	01/04/2023	In house	3761825	07/03/2023	01/04/2023 11:14 by DAG	0.04

Analytical Standard Record

23A0201

Description:	PFAS - MIX MXG 2 ug/mL	Expires:	12/01/2027
Standard Type:	Other	Prepared:	11/30/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS MXG1122)
Vials:	1	Last Edit:	01/11/2023 14:56 by PAF
Lot Number:	PFACMXG1122		

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



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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>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<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: 12/09/2022
(mm/dd/yyyy)

Analytical Standard Record

23A0205

Description:	PFAS - MIX MXF 2 ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFASMXF0122)
Vials:	1	Last Edit:	01/11/2023 14:59 by PAF
Lot Number:	PFACMXF0122		

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



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

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

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
 Figure 1: LC/MS Data (SIR)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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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-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)

Analytical Standard Record

23A0207

Description:	PFAS - MIX MXH 1 ug/mL	Expires:	08/08/2027
Standard Type:	Other	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFACMXH0822)
Vials:	1	Last Edit:	01/11/2023 15:06 by PAF
Lot Number:	PFACMXH0822		

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



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXH

**Native PFAS
Solution/Mixture**

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

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
 Table B: Isomeric Components and Percent Composition of N-MeFOSAA
 Table C: Isomeric Components and Percent Composition of N-EtFOSAA
 Table D: Isomeric Components and Percent Composition of PFHxSK
 Table E: Isomeric Components and Percent Composition of PFOSK
 Figure 1: LC/MS Data (SIR)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, \pm 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		24
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTTrDA	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-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: Σ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: Σ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNs	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	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-perfluorodecane sulfonate	8:2FTS	4000	3840	16

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

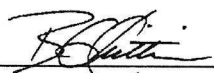
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^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

23A0390

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	01/23/2023 15:26 by ABK
Lot Number:	MPFACHIFES1022		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHHPA		13C4-PFHHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



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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>	MPFACHIFES1022
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	10/28/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	11/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	11/23/2025
<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		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
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		23
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: 11/24/2022
(mm/dd/yyyy)

Analytical Standard Record

23C0075

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	03/05/2023 10:17 by ABK
Lot Number:	MPFACHIFES1022		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHHPA		13C4-PFHHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



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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>	MPFACHIFES1022
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	10/28/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	11/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	11/23/2025
<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		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
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		23
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: 11/24/2022
(mm/dd/yyyy)

Analytical Standard Record

23C0076

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	03/05/2023 10:18 by ABK
Lot Number:	MPFACHIFES1022		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHHPA		13C4-PFHHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



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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>	MPFACHIFES1022
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	10/28/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	11/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	11/23/2025
<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		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
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		23
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: 11/24/2022
(mm/dd/yyyy)