908 N. Temperance Ave., Clovis, CA 93611 - Phone 559-275-2175 - www.applinc.com

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

December 16, 2022

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

RE: Red Hill AFFF Assessment Sampling
22L0071

Enclosed are the results of analyses for samples received by our laboratory on 12/9/2022. If you have any questions concerning this report, please feel free to contact me.

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

Sincerely,

Paula McCartney

Paula McCartney For Gregory Salata
Project Manager

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

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project:	Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number:	Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager:	Watson Tanji	Reported: 12/16/2022 18:24

Data Validatable Report

Analysis Case Narrative

PFAS:

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

The extracted internal standard 13C2-8:2FTS recovered above the upper control limit in sample AF-RHMW06-WGN01B-2212W1.

The extracted internal standards13C2-4:2FTS and D3-NMeFOSAA recovered above the upper control limit in sample AF-RHMW04-WGN01LF-2212W1.

The extracted internal standard 13C6-PFDA recovered above the upper control limit in the BBL0205-BLK1.

The extracted internal standards 13C7-PFUnA and 13C2-PFDoA recovered above the upper control limit in the BBL0205-BS1.

The analyte NFDHA recovered below the lower control limit in the BBL0205-MRL1.

The analyte PFOA and NFDHA recovered above the upper control limit in the SB03835-LCV1.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
22L0071-01	AF-RHMW06-WGN01B-2212W1	Water	12/08/2022 15:25	12/09/2022
22L0071-02	AF-RHMW06-WQEB01-2212W1	Water	12/08/2022 17:10	12/09/2022
22L0071-03	AF-RHMW04-WGN01LF-2212W1	Water	12/07/2022 21:45	12/09/2022

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project:	Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number:	Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager:	Watson Tanji	Reported: 12/16/2022 18:24

Containers Received

Lab ID	Container Type	Count	Preservation Check
22L0071-01			
	500mL P	2	
22L0071-02			
	500mL P	2	
22L0071-03			
	500mL P	2	

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Sample Results

Sample: AF-RHMW06-WGN01B-2212W1
22L0071-01 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.0010 J		0.0016	0.00080	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
PFPEA	0.0019		0.00080	0.00040	0.000065	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHXA	0.00067		0.00040	0.00020	0.000055	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHPA	0.0010		0.00040	0.00020	0.000041	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOA	0.00018 J	IR2,	0.00040	0.00020	0.00015	ug/L	12/14/22	1	EPA 1633	BBL0205
PFNA	0.00020 U	IR2,	0.00040	0.00020	0.000082	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDA	0.00011 J		0.00040	0.00020	0.00010	ug/L	12/14/22	1	EPA 1633	BBL0205
PFUnA	0.00023 J		0.00040	0.00020	0.00016	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDOA	0.00016 J		0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
PFTRDA	0.00030 U		0.00040	0.00030	0.00020	ug/L	12/14/22	1	EPA 1633	BBL0205
PFTEDA	0.00020 U	IR2,	0.00040	0.00020	0.00020	ug/L	12/14/22	1	EPA 1633	BBL0205
PFBS	0.00020 U		0.00040	0.00020	0.000037	ug/L	12/14/22	1	EPA 1633	BBL0205
PFPES	0.00020 U		0.00040	0.00020	0.000063	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHXS	0.00020 U		0.00040	0.00020	0.000032	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHPS	0.00020 U		0.00040	0.00020	0.000051	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOS	0.00053		0.00040	0.00020	0.000064	ug/L	12/14/22	1	EPA 1633	BBL0205
PFNS	0.00020 U		0.00040	0.00020	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDS	0.00020 U		0.00040	0.00020	0.00015	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDOS	0.00020 U		0.00040	0.00020	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
4:2FTS	0.00080 U		0.0016	0.00080	0.00029	ug/L	12/14/22	1	EPA 1633	BBL0205
6:2FTS	0.0016 J		0.0016	0.00080	0.00031	ug/L	12/14/22	1	EPA 1633	BBL0205
8:2FTS	0.00080 U		0.0016	0.00080	0.000082	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOSA	0.00020 U		0.00040	0.00020	0.00010	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSA	0.00080 U		0.0016	0.00080	0.00047	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSA	0.00080 U		0.0016	0.00080	0.00041	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSAA	0.00020 U		0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSAA	0.00020 U		0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSE	0.0012 U		0.0016	0.0012	0.0010	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSE	0.0012 U		0.0016	0.0012	0.0010	ug/L	12/14/22	1	EPA 1633	BBL0205
HFPO-DA	0.00040 U		0.00080	0.00040	0.00017	ug/L	12/14/22	1	EPA 1633	BBL0205
ADONA	0.00040 U		0.00080	0.00040	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
PFEESA	0.00040 U		0.00080	0.00040	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
PFMPA	0.00040 U		0.00080	0.00040	0.000054	ug/L	12/14/22	1	EPA 1633	BBL0205
PFMBA	0.00040 U		0.00080	0.00040	0.000091	ug/L	12/14/22	1	EPA 1633	BBL0205
NFDHA	0.00040 U		0.00080	0.00040	0.00030	ug/L	12/14/22	1	EPA 1633	BBL0205
9CL-PF3ONS	0.00040 U		0.00080	0.00040	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
11CL-PF3OUDS	0.00040 U		0.00080	0.00040	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
3:3FTCA	0.00080 U		0.0016	0.00080	0.00057	ug/L	12/14/22	1	EPA 1633	BBL0205
5:3FTCA	0.00080 U		0.0016	0.00080	0.00044	ug/L	12/14/22	1	EPA 1633	BBL0205
7:3FTCA	0.00080 U		0.0016	0.00080	0.00055	ug/L	12/14/22	1	EPA 1633	BBL0205
Surrogate: 13C4-PFBA	*131%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C5-PFPEA	*131%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C5-PFHXA	*130%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C4-PFHPA	*120%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOA	*143%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Sample Results
(Continued)

Sample: AF-RHMW06-WGN01B-2212W1 (Continued)
22L0071-01 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	*117%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C6-PFDA	*140%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C7-PFUnA	*141%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-PFDOA	*98.3%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-PFTEDA	*114%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-PFBS	*146%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-PFHXS	*136%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOS	*102%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-4:2FTS	*217%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-4:2FTS	*146%*			*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: 13C2-6:2FTS	*169%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-6:2FTS	*133%*			*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: 13C2-8:2FTS	*252%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-8:2FTS	*164%*	*S2*		*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOSA	*86.9%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D5-NETFOSA	*64.4%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSA	*60.3%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSAA	*109%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D5-NETFOSAA	*74.6%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D7-NMEFOSE	*75.6%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D9-NETFOSE	*80.1%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-HFPO-DA	*123%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*

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1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Sample Results
(Continued)

Sample: AF-RHMW06-WQEB01-2212W1
22L0071-02 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.00080 U		0.0016	0.00080	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
PFPEA	0.00040 U		0.00080	0.00040	0.000065	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHXA	0.00020 U		0.00040	0.00020	0.000055	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHPA	0.00020 U		0.00040	0.00020	0.000041	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOA	0.00020 U	IR2,	0.00040	0.00020	0.00015	ug/L	12/14/22	1	EPA 1633	BBL0205
PFNA	0.00020 U		0.00040	0.00020	0.000082	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDA	0.00020 U		0.00040	0.00020	0.00010	ug/L	12/14/22	1	EPA 1633	BBL0205
PFUnA	0.00020 U		0.00040	0.00020	0.00016	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDOA	0.00020 U		0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
PFTRDA	0.00030 U		0.00040	0.00030	0.00020	ug/L	12/14/22	1	EPA 1633	BBL0205
PFTEDA	0.00020 U		0.00040	0.00020	0.00020	ug/L	12/14/22	1	EPA 1633	BBL0205
PFBS	0.00020 U		0.00040	0.00020	0.000037	ug/L	12/14/22	1	EPA 1633	BBL0205
PFPES	0.00020 U		0.00040	0.00020	0.000063	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHXS	0.00020 U		0.00040	0.00020	0.000032	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHPS	0.00020 U		0.00040	0.00020	0.000051	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOS	0.00019 J		0.00040	0.00020	0.000064	ug/L	12/14/22	1	EPA 1633	BBL0205
PFNS	0.00020 U		0.00040	0.00020	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDS	0.00020 U		0.00040	0.00020	0.00015	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDOS	0.00020 U		0.00040	0.00020	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
4:2FTS	0.00080 U		0.0016	0.00080	0.00029	ug/L	12/14/22	1	EPA 1633	BBL0205
6:2FTS	0.00080 U		0.0016	0.00080	0.00031	ug/L	12/14/22	1	EPA 1633	BBL0205
8:2FTS	0.00080 U		0.0016	0.00080	0.000082	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOSA	0.00020 U		0.00040	0.00020	0.00010	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSA	0.00080 U		0.0016	0.00080	0.00047	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSA	0.00080 U		0.0016	0.00080	0.00041	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSAA	0.00020 U		0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSAA	0.00020 U		0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSE	0.0012 U		0.0016	0.0012	0.0010	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSE	0.0012 U		0.0016	0.0012	0.0010	ug/L	12/14/22	1	EPA 1633	BBL0205
HFPO-DA	0.00040 U		0.00080	0.00040	0.00017	ug/L	12/14/22	1	EPA 1633	BBL0205
ADONA	0.00040 U		0.00080	0.00040	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
PFEESA	0.00040 U		0.00080	0.00040	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
PFMPA	0.00040 U		0.00080	0.00040	0.000054	ug/L	12/14/22	1	EPA 1633	BBL0205
PFMBA	0.00040 U		0.00080	0.00040	0.000091	ug/L	12/14/22	1	EPA 1633	BBL0205
NFDHA	0.00040 U		0.00080	0.00040	0.00030	ug/L	12/14/22	1	EPA 1633	BBL0205
9CL-PF3ONS	0.00040 U		0.00080	0.00040	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
11CL-PF3OUDS	0.00040 U		0.00080	0.00040	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
3:3FTCA	0.00080 U		0.0016	0.00080	0.00057	ug/L	12/14/22	1	EPA 1633	BBL0205
5:3FTCA	0.00080 U		0.0016	0.00080	0.00044	ug/L	12/14/22	1	EPA 1633	BBL0205
7:3FTCA	0.00080 U		0.0016	0.00080	0.00055	ug/L	12/14/22	1	EPA 1633	BBL0205
Surrogate: 13C4-PFBA	*128%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C5-PFPEA	*109%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C5-PFHXA	*137%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C4-PFHPA	*114%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOA	*118%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Sample Results
(Continued)

Sample: AF-RHMW06-WQEB01-2212W1 (Continued)
22L0071-02 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	*121%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C6-PFDA	*141%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C7-PFUnA	*162%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C7-PFUnA	*114%*			*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: 13C2-PFDOA	*129%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-PFTEDA	*144%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-PFBS	*125%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-PFHXS	*137%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOS	*124%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-4:2FTS	*141%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-6:2FTS	*143%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-8:2FTS	*128%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOSA	*106%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D5-NETFOSA	*56.3%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSA	*56.5%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSAA	*114%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D5-NETFOSAA	*126%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D7-NMEFOSE	*90.7%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D9-NETFOSE	*97.1%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-HFPO-DA	*117%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Sample Results
(Continued)

Sample: AF-RHMW04-WGN01LF-2212W1
22L0071-03 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.00062 J	0.0016	0.00080	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
PFPEA	0.00072 J	0.00080	0.00040	0.000065	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHXA	0.00033 J	0.00040	0.00020	0.000055	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHPA	0.00025 J	0.00040	0.00020	0.000041	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOA	0.00016 J	0.00040	0.00020	0.00015	ug/L	12/14/22	1	EPA 1633	BBL0205
PFNA	0.00020 U	0.00040	0.00020	0.000082	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDA	0.00020 U	0.00040	0.00020	0.00010	ug/L	12/14/22	1	EPA 1633	BBL0205
PFUnA	0.00020 U	0.00040	0.00020	0.00016	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDOA	0.00020 U	0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
PFTRDA	0.00030 U	0.00040	0.00030	0.00020	ug/L	12/14/22	1	EPA 1633	BBL0205
PFTEDA	0.00020 U	0.00040	0.00020	0.00020	ug/L	12/14/22	1	EPA 1633	BBL0205
PFBS	0.00020 U	0.00040	0.00020	0.000037	ug/L	12/14/22	1	EPA 1633	BBL0205
PFPES	0.00020 U	0.00040	0.00020	0.000063	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHXS	0.00020 U	0.00040	0.00020	0.000032	ug/L	12/14/22	1	EPA 1633	BBL0205
PFHPS	0.00020 U	0.00040	0.00020	0.000051	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOS	0.00016 J	0.00040	0.00020	0.000064	ug/L	12/14/22	1	EPA 1633	BBL0205
PFNS	0.00020 U	0.00040	0.00020	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDS	0.00020 U	0.00040	0.00020	0.00015	ug/L	12/14/22	1	EPA 1633	BBL0205
PFDOS	0.00020 U	0.00040	0.00020	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
4:2FTS	0.00080 U	0.0016	0.00080	0.00029	ug/L	12/14/22	1	EPA 1633	BBL0205
6:2FTS	0.0069	0.0016	0.00080	0.00031	ug/L	12/14/22	1	EPA 1633	BBL0205
8:2FTS	0.00080 U	0.0016	0.00080	0.000082	ug/L	12/14/22	1	EPA 1633	BBL0205
PFOSA	0.00020 U	0.00040	0.00020	0.00010	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010	ug/L	12/14/22	1	EPA 1633	BBL0205
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010	ug/L	12/14/22	1	EPA 1633	BBL0205
HFPO-DA	0.00040 U	0.00080	0.00040	0.00017	ug/L	12/14/22	1	EPA 1633	BBL0205
ADONA	0.00040 U	0.00080	0.00040	0.00012	ug/L	12/14/22	1	EPA 1633	BBL0205
PFEESA	0.00040 U	0.00080	0.00040	0.00011	ug/L	12/14/22	1	EPA 1633	BBL0205
PFMPA	0.00040 U	0.00080	0.00040	0.000054	ug/L	12/14/22	1	EPA 1633	BBL0205
PFMBA	0.00040 U	0.00080	0.00040	0.000091	ug/L	12/14/22	1	EPA 1633	BBL0205
NFDHA	0.00040 U	0.00080	0.00040	0.00030	ug/L	12/14/22	1	EPA 1633	BBL0205
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021	ug/L	12/14/22	1	EPA 1633	BBL0205
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057	ug/L	12/14/22	1	EPA 1633	BBL0205
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044	ug/L	12/14/22	1	EPA 1633	BBL0205
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055	ug/L	12/14/22	1	EPA 1633	BBL0205
Surrogate: 13C4-PFBA	*127%*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C5-PFPEA	*141%*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C5-PFHXA	*141%*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C4-PFHPA	*135%*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOA	*130%*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Sample Results
(Continued)

Sample: AF-RHMW04-WGN01LF-2212W1 (Continued)
22L0071-03 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	*127%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C6-PFDA	*110%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C7-PFUnA	*98.8%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-PFDOA	*113%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-PFTEDA	*118%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-PFBS	*131%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-PFHXS	*124%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOS	*114%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-4:2FTS	*405%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-4:2FTS	*157%*	*S2*		*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: 13C2-6:2FTS	*180%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C2-6:2FTS	*125%*			*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: 13C2-8:2FTS	*150%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C8-PFOSA	*91.4%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D5-NETFOSA	*71.6%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSA	*62.4%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSAA	*162%*	*S2*		*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D3-NMEFOSAA	*153%*	*S2*		*20-150*			*12/14/22*	10	*EPA 1633*	*BBL0205*
Surrogate: D5-NETFOSAA	*149%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D7-NMEFOSE	*80.2%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: D9-NETFOSE	*61.2%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*
Surrogate: 13C3-HFPO-DA	*128%*			*20-150*			*12/14/22*	1	*EPA 1633*	*BBL0205*

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Quality Control

Per- and Polyfluoroalkyl Substances

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0205 - 1633										
Blank (BBL0205-BLK1)						Prepared: 12/09/22 14:19 Analyzed: 12/14/22 12:12				
	ug/L									
PFBA	0.00080 U	0.0016	0.00080	0.00021						
PFPEA	0.00040 U	0.00080	0.00040	0.000065						
PFHXA	0.00020 U	0.00040	0.00020	0.000055						
PFHPA	0.00020 U	0.00040	0.00020	0.000041						
PFOA	0.00020 U	0.00040	0.00020	0.00015						
PFNA	0.00020 U	0.00040	0.00020	0.000082						
PFDA	0.00020 U	0.00040	0.00020	0.00010						
PFUnA	0.00020 U	0.00040	0.00020	0.00016						
PFDOA	0.00020 U	0.00040	0.00020	0.00011						
PFTRDA	0.00030 U	0.00040	0.00030	0.00020						
PFTEDA	0.00020 U	0.00040	0.00020	0.00020						
PFBS	0.00020 U	0.00040	0.00020	0.000037						
PFPES	0.00020 U	0.00040	0.00020	0.000063						
PFHXS	0.00020 U	0.00040	0.00020	0.000032						
PFHPS	0.00020 U	0.00040	0.00020	0.000051						
PFOS	0.0000893 J IR2,	0.00040	0.00020	0.000064						
PFNS	0.00020 U	0.00040	0.00020	0.00012						
PFDS	0.00020 U	0.00040	0.00020	0.00015						
PFDOS	0.00020 U	0.00040	0.00020	0.00012						
4:2FTS	0.00080 U	0.0016	0.00080	0.00029						
6:2FTS	0.00080 U	0.0016	0.00080	0.00031						
8:2FTS	0.00080 U	0.0016	0.00080	0.000082						
PFOSA	0.00020 U	0.00040	0.00020	0.00010						
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047						
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041						
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011						
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011						
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010						
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010						
HFPO-DA	0.00040 U	0.00080	0.00040	0.00017						
ADONA	0.00040 U	0.00080	0.00040	0.00012						
PFEESA	0.00040 U	0.00080	0.00040	0.00011						
PFMPA	0.00040 U	0.00080	0.00040	0.000054						
PFMBA	0.00040 U	0.00080	0.00040	0.000091						
NFDHA	0.00040 U	0.00080	0.00040	0.00030						
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021						
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021						
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057						
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044						
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055						
Surrogates										
13C4-PFBA	*0.0421*				*0.0320*		*132*	*20-150*		
13C5-PFPEA	*0.0200*				*0.0160*		*125*	*20-150*		
13C5-PFHXA	*0.0101*				*0.00800*		*126*	*20-150*		
13C4-PFHPA	*0.00957*				*0.00800*		*120*	*20-150*		
13C8-PFOA	*0.00934*				*0.00800*		*117*	*20-150*		

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0205 - 1633 (Continued)										
Blank (BBL0205-BLK1)						Prepared: 12/09/22 14:19	Analyzed: 12/14/22 12:12			
	ug/L									
Surrogates										
13C9-PFNA	*0.00473*				*0.00400*		*118*	*20-150*		
13C6-PFDA	*0.00607* S2				*0.00400*		*152*	*20-150*		
13C7-PFUnA	*0.00581*				*0.00400*		*145*	*20-150*		
13C2-PFDOA	*0.00533*				*0.00400*		*133*	*20-150*		
13C2-PFTEDA	*0.00570*				*0.00400*		*142*	*20-150*		
13C3-PFBS	*0.00998*				*0.00800*		*125*	*20-150*		
13C3-PFHXS	*0.0102*				*0.00800*		*128*	*20-150*		
13C8-PFOS	*0.00797*				*0.00800*		*99.6*	*20-150*		
13C2-4:2FTS	*0.0201*				*0.0160*		*126*	*20-150*		
13C2-6:2FTS	*0.0182*				*0.0160*		*114*	*20-150*		
13C2-8:2FTS	*0.0196*				*0.0160*		*123*	*20-150*		
13C8-PFOSA	*0.00739*				*0.00800*		*92.4*	*20-150*		
D5-NETFOSA	*0.00371*				*0.00800*		*46.3*	*20-150*		
D3-NMEFOSA	*0.00363*				*0.00800*		*45.4*	*20-150*		
D3-NMEFOSAA	*0.0145*				*0.0160*		*90.5*	*20-150*		
D5-NETFOSAA	*0.0161*				*0.0160*		*101*	*20-150*		
D7-NMEFOSE	*0.0493*				*0.0800*		*61.7*	*20-150*		
D9-NETFOSE	*0.0487*				*0.0800*		*60.9*	*20-150*		
13C3-HFPO-DA	*0.0368*				*0.0320*		*115*	*20-150*		
LCS (BBL0205-BS1)						Prepared: 12/09/22 14:19	Analyzed: 12/14/22 12:25			
	ug/L									
PFBA	0.0174				0.0160		109	40-150		
PFPEA	0.00875				0.00800		109	40-150		
PFHXA	0.00439				0.00400		110	40-150		
PFHPA	0.00463				0.00400		116	40-150		
PFOA	0.00419				0.00400		105	40-150		
PFNA	0.00499				0.00400		125	40-150		
PFDA	0.00414				0.00400		103	40-150		
PFUnA	0.00407				0.00400		102	40-150		
PFDOA	0.00394				0.00400		98.5	40-150		
PFTRDA	0.00374				0.00400		93.5	40-150		
PFTEDA	0.00430				0.00400		108	40-150		
PFBS	0.00412				0.00354		116	40-150		
PFPES	0.00433				0.00376		115	40-150		
PFHXS	0.00394				0.00366		108	40-150		
PFHPS	0.00389				0.00382		102	40-150		
PFOS	0.00421				0.00372		113	40-150		
PFNS	0.00470				0.00384		122	40-150		
PFDS	0.00395				0.00386		102	40-150		
PFDOS	0.00398				0.00388		103	40-150		
4:2FTS	0.0169				0.0150		113	40-150		
6:2FTS	0.0180				0.0152		118	40-150		
8:2FTS	0.0186				0.0154		121	40-150		
PFOSA	0.00495				0.00400		124	40-150		

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AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0205 - 1633 (Continued)										
LCS (BBL0205-BS1)						Prepared: 12/09/22 14:19		Analyzed: 12/14/22 12:25		
	ug/L									
NMeFOSA	0.0193				0.0160		121	40-150		
NEtFOSA	0.0175				0.0160		109	40-150		
NMeFOSAA	0.00443				0.00400		111	40-150		
NEtFOSAA	0.00476				0.00400		119	40-150		
NMeFOSE	0.0181				0.0160		113	40-150		
NEtFOSE	0.0168				0.0160		105	40-150		
HFPO-DA	0.00791				0.00800		98.8	40-150		
ADONA	0.00806				0.00756		107	40-150		
PFEESA	0.00745				0.00712		105	40-150		
PFMPA	0.00855				0.00800		107	40-150		
PFMBA	0.00848				0.00800		106	40-150		
NFDHA	0.00868				0.00800		108	40-150		
9CL-PF3ONS	0.00833				0.00748		111	40-150		
11CL-PF3OUDS	0.00861				0.00756		114	40-150		
3:3FTCA	0.0175				0.0160		109	40-150		
5:3FTCA	0.0183				0.0160		114	40-150		
7:3FTCA	0.0163				0.0160		102	40-150		
Surrogates										
13C4-PFBA	*0.0391*				*0.0320*		*122*	*20-150*		
13C5-PFPEA	*0.0214*				*0.0160*		*134*	*20-150*		
13C5-PFHXA	*0.0113*				*0.00800*		*141*	*20-150*		
13C4-PFHPA	*0.0106*				*0.00800*		*133*	*20-150*		
13C8-PFOA	*0.0108*				*0.00800*		*135*	*20-150*		
13C9-PFNA	*0.00474*				*0.00400*		*118*	*20-150*		
13C6-PFDA	*0.00574*				*0.00400*		*144*	*20-150*		
13C7-PFUnA	*0.00720* S2				*0.00400*		*180*	*20-150*		
13C2-PFDOA	*0.00638* S2				*0.00400*		*159*	*20-150*		
13C2-PFTEDA	*0.00547*				*0.00400*		*137*	*20-150*		
13C3-PFBS	*0.0101*				*0.00800*		*126*	*20-150*		
13C3-PFHXS	*0.0105*				*0.00800*		*132*	*20-150*		
13C8-PFOS	*0.00862*				*0.00800*		*108*	*20-150*		
13C2-4:2FTS	*0.0205*				*0.0160*		*128*	*20-150*		
13C2-6:2FTS	*0.0191*				*0.0160*		*120*	*20-150*		
13C2-8:2FTS	*0.0211*				*0.0160*		*132*	*20-150*		
13C8-PFOSA	*0.00816*				*0.00800*		*102*	*20-150*		
D5-NETFOSA	*0.00445*				*0.00800*		*55.6*	*20-150*		
D3-NMEFOSA	*0.00437*				*0.00800*		*54.7*	*20-150*		
D3-NMEFOSAA	*0.0171*				*0.0160*		*107*	*20-150*		
D5-NETFOSAA	*0.0177*				*0.0160*		*111*	*20-150*		
D7-NMEFOSE	*0.0621*				*0.0800*		*77.6*	*20-150*		
D9-NETFOSE	*0.0647*				*0.0800*		*80.9*	*20-150*		
13C3-HFPO-DA	*0.0452*				*0.0320*		*141*	*20-150*		

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0205 - 1633 (Continued)										
MRL Check (BBL0205-MRL1)						Prepared: 12/09/22 14:19		Analyzed: 12/14/22 12:37		
	ug/L									
PFBA	0.00163				0.00160		102	40-150		
PFPEA	0.000858				0.000800		107	40-150		
PFHXA	0.000464 IR2				0.000400		116	40-150		
PFHPA	0.000492				0.000400		123	40-150		
PFOA	0.000599				0.000400		150	40-150		
PFNA	0.000535				0.000400		134	40-150		
PFDA	0.000571 IR1				0.000400		143	40-150		
PFUnA	0.000413 IR2				0.000400		103	40-150		
PFDOA	0.000388 J IR1,				0.000400		96.9	40-150		
PFTRDA	0.000509				0.000400		127	40-150		
PFTEDA	0.000402 IR2				0.000400		101	40-150		
PFBS	0.000448				0.000354		127	40-150		
PFPES	0.000363 J				0.000376		96.6	40-150		
PFHXS	0.000414 MI5				0.000366		113	40-150		
PFHPS	0.000337 J				0.000382		88.2	40-150		
PFOS	0.000544 MI5				0.000372		146	40-150		
PFNS	0.000388 J				0.000384		101	40-150		
PFDS	0.000383 J				0.000386		99.1	40-150		
PFDOS	0.000499				0.000388		129	40-150		
4:2FTS	0.00173				0.00150		115	40-150		
6:2FTS	0.00195				0.00152		128	40-150		
8:2FTS	0.00182				0.00154		118	40-150		
PFOSA	0.000542				0.000400		135	40-150		
NMeFOSA	0.00169				0.00160		106	40-150		
NEtFOSA	0.00163				0.00160		102	40-150		
NMeFOSAA	0.000446 IR2				0.000400		111	40-150		
NEtFOSAA	0.000400				0.000400		100	40-150		
NMeFOSE	0.00174				0.00160		109	40-150		
NEtFOSE	0.00237				0.00160		148	40-150		
HFPO-DA	0.000910				0.000800		114	40-150		
ADONA	0.000884				0.000756		117	40-150		
PFEESA	0.000718 J				0.000712		101	40-150		
PFMPA	0.000957				0.000800		120	40-150		
PFMBA	0.000913				0.000800		114	40-150		
NFDHA	0.000282 J BS1,				0.000800		35.3	40-150		
9CL-PF3ONS	0.000879				0.000748		118	40-150		
11CL-PF3OUDS	0.000917				0.000756		121	40-150		
3:3FTCA	0.00198				0.00160		124	40-150		
5:3FTCA	0.00226				0.00160		141	40-150		
7:3FTCA	0.00162				0.00160		101	40-150		
Surrogates										
13C4-PFBA	*0.0380*				*0.0320*		*119*	*20-150*		
13C5-PFPEA	*0.0169*				*0.0160*		*106*	*20-150*		
13C5-PFHXA	*0.00924*				*0.00800*		*116*	*20-150*		
13C4-PFHPA	*0.00970*				*0.00800*		*121*	*20-150*		
13C8-PFOA	*0.0106*				*0.00800*		*132*	*20-150*		

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 12/16/2022 18:24

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0205 - 1633 (Continued)										
MRL Check (BBL0205-MRL1)						Prepared: 12/09/22 14:19		Analyzed: 12/14/22 12:37		
	ug/L									
Surrogates										
13C9-PFNA	*0.00509*				*0.00400*		*127*	*20-150*		
13C6-PFDA	*0.00466*				*0.00400*		*117*	*20-150*		
13C7-PFUnA	*0.00584*				*0.00400*		*146*	*20-150*		
13C2-PFDOA	*0.00548*				*0.00400*		*137*	*20-150*		
13C2-PFTEDA	*0.00458*				*0.00400*		*114*	*20-150*		
13C3-PFBS	*0.00956*				*0.00800*		*119*	*20-150*		
13C3-PFHXS	*0.00995*				*0.00800*		*124*	*20-150*		
13C8-PFOS	*0.00909*				*0.00800*		*114*	*20-150*		
13C2-4:2FTS	*0.0190*				*0.0160*		*119*	*20-150*		
13C2-6:2FTS	*0.0190*				*0.0160*		*118*	*20-150*		
13C2-8:2FTS	*0.0173*				*0.0160*		*108*	*20-150*		
13C8-PFOSA	*0.00801*				*0.00800*		*100*	*20-150*		
D5-NETFOSA	*0.00419*				*0.00800*		*52.4*	*20-150*		
D3-NMEFOSA	*0.00426*				*0.00800*		*53.3*	*20-150*		
D3-NMEFOSAA	*0.0176*				*0.0160*		*110*	*20-150*		
D5-NETFOSAA	*0.0196*				*0.0160*		*122*	*20-150*		
D7-NMEFOSE	*0.0584*				*0.0800*		*73.1*	*20-150*		
D9-NETFOSE	*0.0608*				*0.0800*		*75.9*	*20-150*		
13C3-HFPO-DA	*0.0368*				*0.0320*		*115*	*20-150*		

The contents of this report apply to the sample(s) analyzed in accordance with the chain of custody document.
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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project:	Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number:	Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager:	Watson Tanji	Reported: 12/16/2022 18:24

Notes and Definitions

Item	Definition
BS1	Blank spike recovered below the lower control limit
CV2	Calibration verification recovered above the upper control limit
IR1	Ion ratio below the lower control limit
IR2	Ion ratio above the upper control limit
J	Estimated value
MI5	Manual integration, whole peak was not integrated
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
DL	Dilution Factor
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
*	Value outside control limits
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.

The contents of this report apply to the sample(s) analyzed in accordance with the chain of custody document.
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WORK ORDER

22L0071

Printed: 12/16/2022 6:24 pm

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

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

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

Date Received: 12/09/2022 02:10 PM
Date Due: 12/16/2022 (5.00 day TAT)

Logged In By: Megan Salata
Received By: Lincoln Hooper

Analysis		Comments
22L0071-01 AF-RHMW06-WGN01B-2212W1 [Water] Sampled 12/8/2022 3:25:00PM		
1633	NONE	"Report relevant surrogates"
22L0071-02 AF-RHMW06-WQEB01-2212W1 [Water] Sampled 12/8/2022 5:10:00PM		
1633	NONE	"Report relevant surrogates"
22L0071-03 AF-RHMW04-WGN01LF-2212W1 [Water] Sampled 12/7/2022 9:45:00PM		
1633	NONE	"Report relevant surrogates"

22L0071 **Sample Receipt Log**

Default Cooler

Samples Received at: **3.0°C**

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

22L0071

APPL LABS

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

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

C.O.C. 2212W1AP-14

Report to: PLEASE PRINT
Company Name: AECOM
Phone: 808-954-4512
Address: 1001 Bishop St ste1600
Honolulu, HI 96813
Fax:
Attn: Watson Tanji
Email: watson.tanji@aecom.com

Invoice to: PLEASE PRINT
Company Name: AECOM
Phone:
Address:
Fax:
Attn: Sheree Smith
Email: USAPimaging@aecom.com

Project Name/Number: 60697810
Purchase Order Number:
Sampler (Print): CHRIS WOMACK
Sampler (Signature): 12/8/22

Date Shipped:
Carrier:
Waybill No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	Analysis Requested/Method Number: PFAS EPA Draft 1633	Comments
AF-RHMW06-WGN01B-2212W1	RHMW06	12/8/22	1525	HST	2	✔			✔	Store ALL samples until notified by client to dispose
AF-RHMW06-WQEB01-2212W1	RHMW06	12/8/22	1710	HST	2	✔			✔	

12/8/22

Shuttle Temperature: RI: 4/3°C

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

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

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
CHRIS WOMACK	12/8/22	1725	Miranda DeGarmo	Miranda DeGarmo	12/8/22	1815	
Relinquished by:	**Date**	**Time**	**Received by:**	**Relinquished by:**	**Date**	**Time**	**Received at lab by:**
					12/9/22	1410	Lydia Hagen

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

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

ELECTRONIC CHAIN OF CUSTODY RECORD

Phone: (559) 275-2175
Fax: (559) 275-4422
coc@applinc.com

C.O.C. 2212W1AP- 13

Report to: PLEASE PRINT

Company Name: AECOM
Phone: 808-954-4512
Address: 1001 Bishop St ste1600
Honolulu, HI 96813
Fax:
Attn: Watson Tanji
Email: watson.tanji@aecom.com

Invoice to: PLEASE PRINT

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

Project Name/Number: 60697810
Purchase Order Number:
Sampler (Print):
Sampler (Signature):

Date Shipped:
Carrier:
Waybill No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Sed.	Soil		PFAS EPA Draft 1633											
AF-RHMW04-WGN01LF-2212W1	RHMW04	12-7-22	2145	HST	2	✓				✓											

Store **ALL** samples until notified by client to dispose

Shuttle Temperature:

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

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

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
Christian Castillo	12-7-22	2230	Alex Edwards	Alex Edwards	12/8/22	1905	
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date 12/9/22	Time 1410	Received at lab by: Lindsey Harper

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

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CUSTODY SEAL
AECOM (808) 521-3051
Initials CL Date 12/18/22

PFAS

SAMPLE DATA

FORM I
ANALYSIS DATA SHEET

AF-RHMW06-WGN01B-2212W1

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-01	File ID:	S2022-12-14A (12)
Sampled:	12/08/22 15:25	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 13:41
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
PFBA	0.0010 J	0.0016	0.00080	0.00021	
PFPEA	0.0019	0.00080	0.00040	0.000065	
PFHXA	0.00067	0.00040	0.00020	0.000055	
PFHPA	0.0010	0.00040	0.00020	0.000041	
PFOA	0.00018 J	0.00040	0.00020	0.00015	IR2,
PFNA	0.00020 U	0.00040	0.00020	0.000082	IR2,
PFDA	0.00011 J	0.00040	0.00020	0.00010	
PFUnA	0.00023 J	0.00040	0.00020	0.00016	
PFDOA	0.00016 J	0.00040	0.00020	0.00011	
PFTRDA	0.00030 U	0.00040	0.00030	0.00020	
PFTEDA	0.00020 U	0.00040	0.00020	0.00020	IR2,
PFBS	0.00020 U	0.00040	0.00020	0.000037	
PFPES	0.00020 U	0.00040	0.00020	0.000063	
PFHXS	0.00020 U	0.00040	0.00020	0.000032	
PFHPS	0.00020 U	0.00040	0.00020	0.000051	
PFOS	0.00053	0.00040	0.00020	0.000064	
PFNS	0.00020 U	0.00040	0.00020	0.00012	
PFDS	0.00020 U	0.00040	0.00020	0.00015	
PFDOS	0.00020 U	0.00040	0.00020	0.00012	
4:2FTS	0.00080 U	0.0016	0.00080	0.00029	
6:2FTS	0.0016 J	0.0016	0.00080	0.00031	
8:2FTS	0.00080 U	0.0016	0.00080	0.000082	
PFOSA	0.00020 U	0.00040	0.00020	0.00010	
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047	
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041	
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011	
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011	
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010	
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010	
HFPO-DA	0.00040 U	0.00080	0.00040	0.00017	

FORM I
ANALYSIS DATA SHEET

AF-RHMW06-WGN01B-2212W1

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-01	File ID:	S2022-12-14A (12)
Sampled:	12/08/22 15:25	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 13:41
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

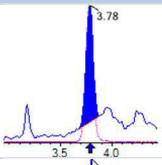
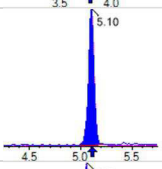
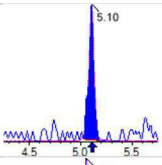
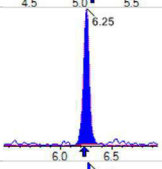
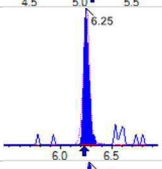
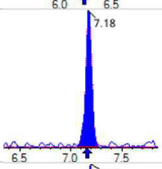
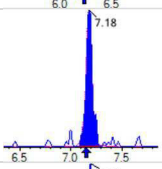
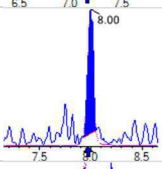
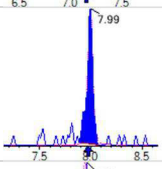
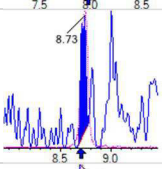
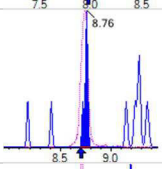
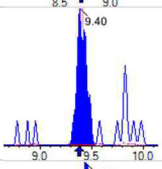
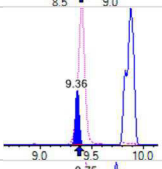
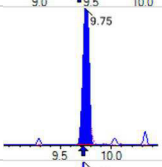
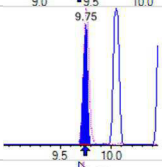
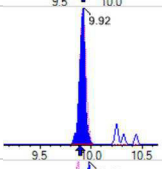
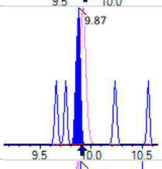
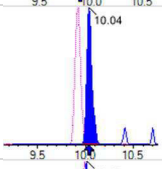
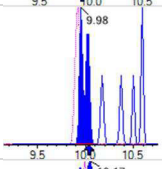
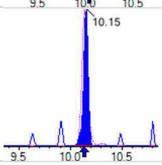
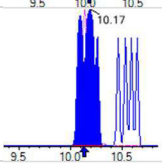
COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
ADONA	0.00040 U	0.00080	0.00040	0.00012	
PFEESA	0.00040 U	0.00080	0.00040	0.00011	
PFMPA	0.00040 U	0.00080	0.00040	0.000054	
PFMBA	0.00040 U	0.00080	0.00040	0.000091	
NFDHA	0.00040 U	0.00080	0.00040	0.00030	
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021	
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021	
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057	
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044	
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 15154	(3.78 , 1.00) (0.00 , N/A , 0.0)	28.0	N/A 0.0 0.0	0.2582	N/A			
PFPeA	(262.9 / 219.0) 46279 (262.9 / 69.0) 635	(5.10 , 1.00) (0.00 , N/A , -0.2)	329.0 35.4	0.0137 109.2 116.8	0.4844	N/A			
PFHxA	(313.0 / 269.0) 24171 (313.0 / 119.0) 2482	(6.25 , 1.00) (0.00 , N/A , 0.3)	131.9 69.1	0.1027 110.9 96.4	0.1676	N/A			
PFHpA	(363.0 / 319.0) 30423 (363.0 / 169.0) 7675	(7.18 , 1.00) (0.00 , N/A , -0.3)	99.6 78.3	0.2523 81.1 77.9	0.2536	N/A			
PFOA	(413.0 / 369.0) 6521 (413.0 / 169.0) 2881	(8.00 , 1.00) (0.01 , N/A , 0.3)	25.7 46.5	0.4418 131.6 151.6	0.0462	N/A			IR2,
PFNA	(463.0 / 419.0) 2031 (463.0 / 169.0) 599	(8.73 , 1.00) (-0.01 , N/A , -2.0)	8.4 18.4	0.2949 168.0 144.6	0.0202	N/A			IR2,
PFDA	(513.0 / 469.0) 4540 (513.0 / 169.0) 564	(9.40 , 1.00) (0.00 , N/A , 2.5)	19.8 450.2	0.1241 123.3 94.8	0.0276	N/A			
PFUnA	(563.0 / 519.0) 11408 (563.0 / 169.0) 784	(9.75 , 1.00) (0.00 , N/A , 0.4)	187.6 359.5	0.0687 75.1 79.1	0.0586	N/A			
PFDoA	(613.0 / 569.0) 6512 (613.0 / 169.0) 829	(9.92 , 1.00) (0.00 , N/A , 2.5)	80.0 25.0	0.1274 99.4 89.5	0.0390	N/A			
PFTrDA	(663.0 / 619.0) 4132 (663.0 / 169.0) 1235	(10.04 , 1.01) (N/A , 0.01 , 3.1)	344.9 13.9	0.2990 136.1 129.7	0.0300	N/A			
PFTeDA	(713.0 / 669.0) 4673 (713.0 / 169.0) 1830	(10.15 , 1.00) (0.01 , N/A , -0.8)	82.7 7.3	0.3915 210.4 223.1	0.0364	N/A			IR2,

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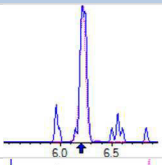
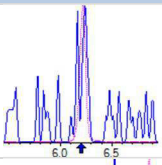
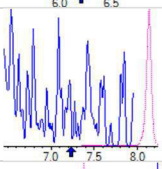
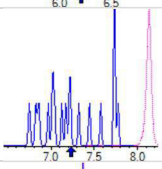
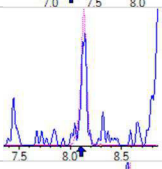
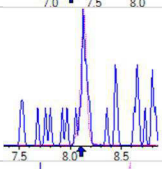
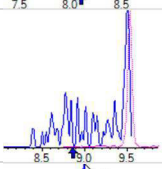
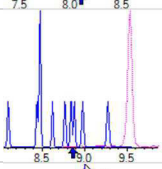
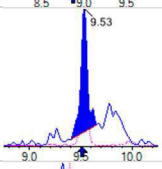
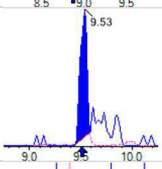
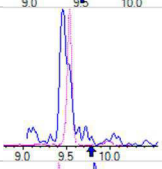
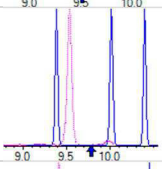
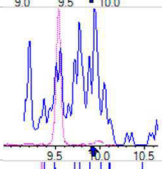
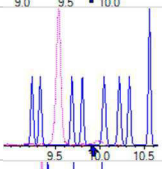
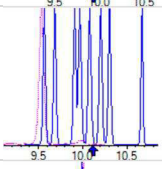
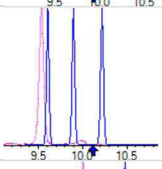
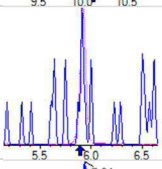
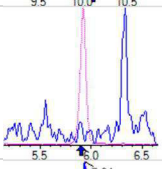
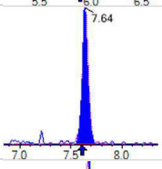
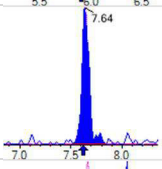
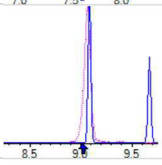
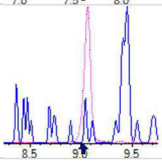
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 52108 (499.0 / 99.0) 7406	(9.53 , 1.00) (0.00 , N/A , 0.3)	34.9 11.8	0.1421 61.9 55.7	0.1324	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 20201 (427.0 / 81.0) 16468	(7.64 , 1.00) (0.00 , N/A , -0.3)	121.2 77.0	0.8152 125.5 109.9	0.3894	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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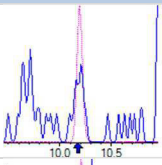
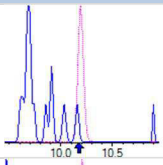
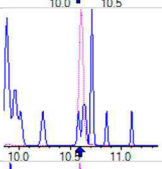
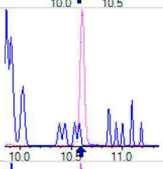
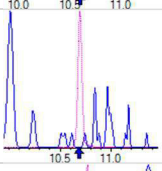
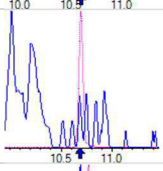
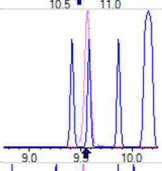
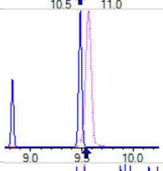
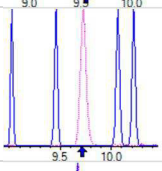
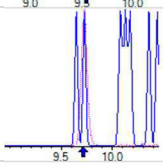
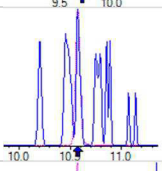
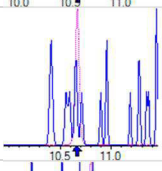
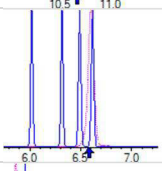
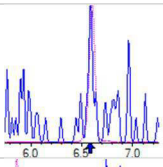
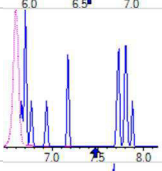
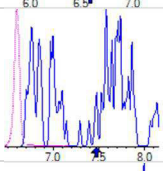
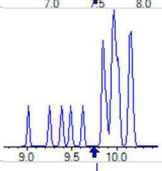
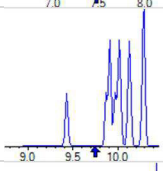
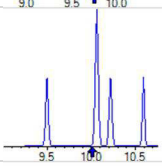
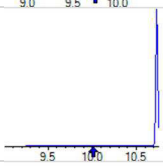
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

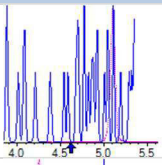
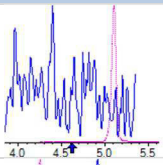
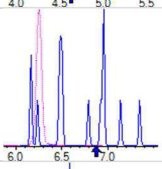
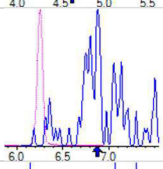
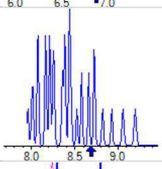
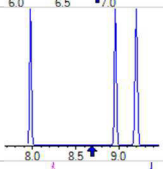
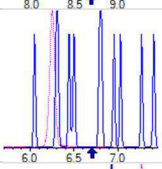
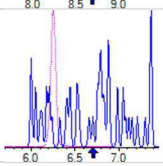
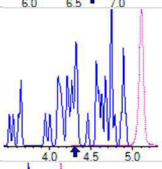
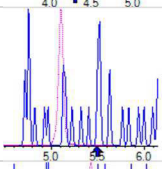
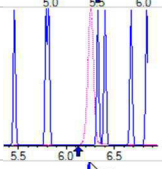
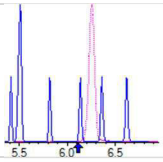
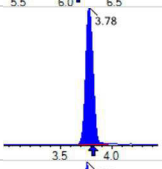
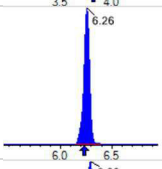
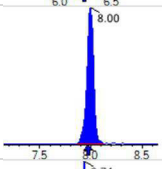
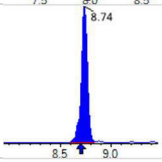
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

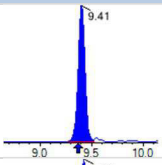
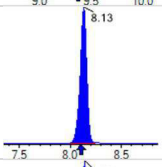
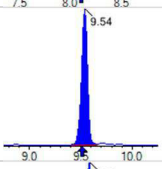
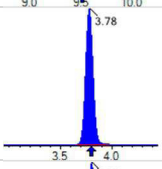
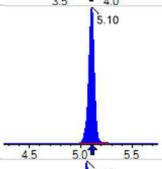
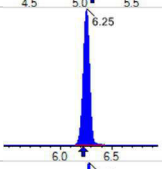
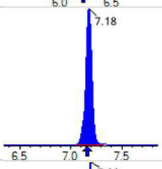
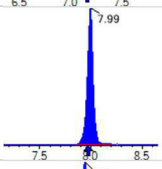
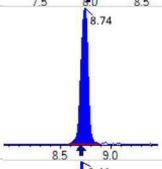
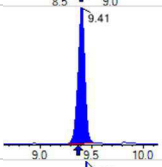
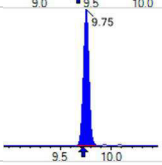
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 83988	(3.78 , N/A) (N/A , 0.06 , N/A)	737.2	N/A	0.6922 [1.0000]	69.2% { 87.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 148156	(6.26 , N/A) (N/A , 0.08 , N/A)	657.7	N/A	0.8119 [1.0000]	81.2% { 84.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 128612	(8.00 , N/A) (N/A , 0.07 , N/A)	393.9	N/A	0.7368 [1.0000]	73.7% { 88.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 122234	(8.74 , N/A) (N/A , 0.07 , N/A)	375.1	N/A	0.8995 [1.0000]	90.0% { 104.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

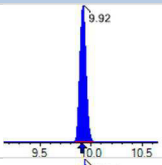
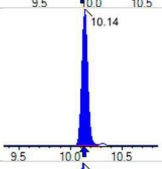
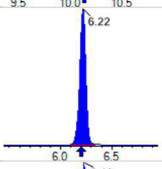
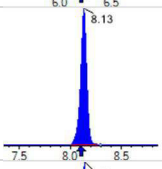
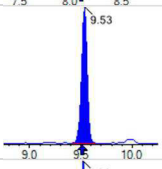
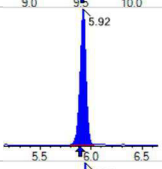
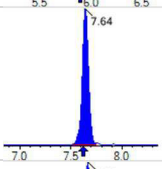
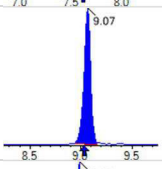
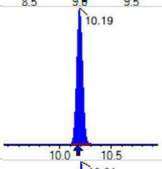
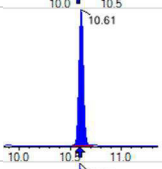
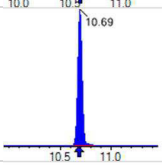
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 121277	(9.41 , N/A) (N/A , 0.06 , N/A)	228.3	N/A	0.8740 [1.0000]	87.4% { 92.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 229597	(8.13 , N/A) (N/A , 0.07 , N/A)	834.9	N/A	0.7114 [1.0000]	71.1% { 81.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 281368	(9.54 , N/A) (N/A , 0.04 , N/A)	318.8	N/A	1.1173 [1.0000]	111.7% { 110.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 668387	(3.78 , N/A) (N/A , 0.06 , N/A)	1057.9	N/A	10.4402 [8.0000]	130.5% { 104.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 430550	(5.10 , N/A) (N/A , 0.08 , N/A)	761.9	N/A	5.2477 [4.0000]	131.2% { 131.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 325404	(6.25 , N/A) (N/A , 0.08 , N/A)	771.8	N/A	2.6062 [2.0000]	130.3% { 117.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 259225	(7.18 , N/A) (N/A , 0.07 , N/A)	620.4	N/A	2.3916 [2.0000]	119.6% { 111.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 282507	(7.99 , N/A) (N/A , 0.07 , N/A)	673.7	N/A	2.8646 [2.0000]	143.2% { 121.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 110066	(8.74 , N/A) (N/A , 0.07 , N/A)	244.6	N/A	1.1687 [1.0000]	116.9% { 107.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 162403	(9.41 , N/A) (N/A , 0.06 , N/A)	316.5	N/A	1.3963 [1.0000]	139.6% { 133.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 224569	(9.75 , N/A) (N/A , 0.02 , N/A)	424.7	N/A	1.4058 [1.0000]	140.6% { 128.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

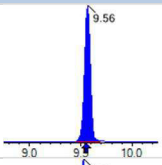
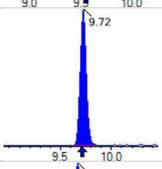
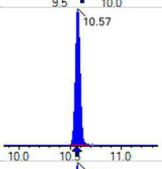
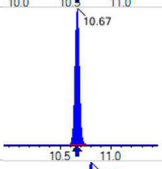
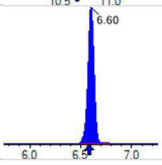
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 193026	(9.92 , N/A) (N/A , 0.01 , N/A)	504.4	N/A	0.9826 [1.0000]	98.3% { 92.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 140327	(10.14 , N/A) (N/A , 0.01 , N/A)	401.8	N/A	1.1376 [1.0000]	113.8% { 104.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 768769	(6.22 , N/A) (N/A , 0.07 , N/A)	644.0	N/A	2.9101 [2.0000]	145.5% { 113.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 405574	(8.13 , N/A) (N/A , 0.07 , N/A)	759.3	N/A	2.7280 [2.0000]	136.4% { 107.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 715964	(9.53 , N/A) (N/A , 0.04 , N/A)	279.2	N/A	2.0437 [2.0000]	102.2% { 120.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 133838	(5.92 , N/A) (N/A , 0.09 , N/A)	522.9	N/A	8.6682 [4.0000]	216.7% { 178.8% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 127316	(7.64 , N/A) (N/A , 0.07 , N/A)	745.2	N/A	6.7440 [4.0000]	168.6% { 126.1% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 190019	(9.07 , N/A) (N/A , 0.07 , N/A)	330.0	N/A	10.0887 [4.0000]	252.2% { 195.9% }			S2,
13C8_PFOSA_EIS	(506.0 / 78.0) 920917	(10.19 , N/A) (N/A , 0.02 , N/A)	760.9	N/A	1.7379 [2.0000]	86.9% { 104.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 163984	(10.61 , N/A) (N/A , 0.01 , N/A)	574.1	N/A	1.2056 [2.0000]	60.3% { 70.1% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 151894	(10.69 , N/A) (N/A , 0.01 , N/A)	1009.8	N/A	1.2871 [2.0000]	64.4% { 80.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (12)
Acquired: 2022/12/14 - 13:41

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 362499	(9.56 , N/A) (N/A , 0.04 , N/A)	675.9	N/A	4.3718 [4.0000]	109.3% { 142.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 223915	(9.72 , N/A) (N/A , 0.03 , N/A)	461.9	N/A	2.9845 [4.0000]	74.6% { 91.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 394232	(10.57 , N/A) (N/A , 0.01 , N/A)	1008.9	N/A	15.1185 [20.0000]	75.6% { 97.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 209364	(10.67 , N/A) (N/A , 0.01 , N/A)	762.5	N/A	16.0234 [20.0000]	80.1% { 95.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 755518	(6.60 , N/A) (N/A , 0.08 , N/A)	873.3	N/A	9.8784 [8.0000]	123.5% { 113.7% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW06-WGN01B-2212W1

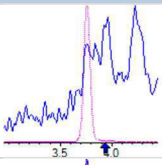
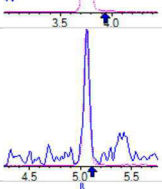
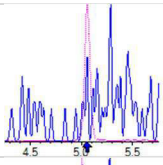
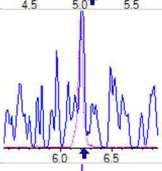
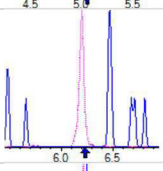
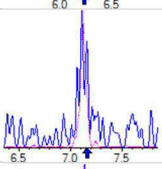
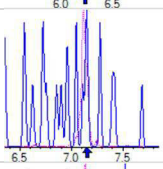
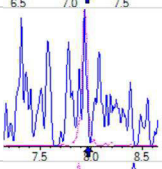
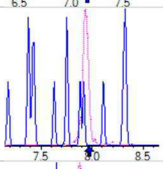
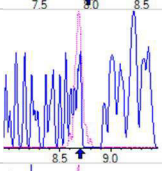
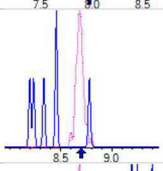
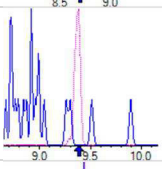
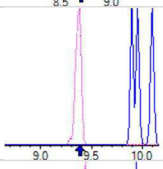
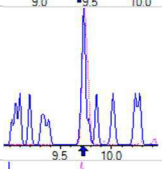
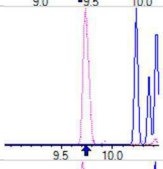
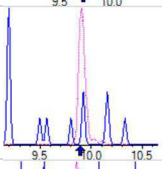
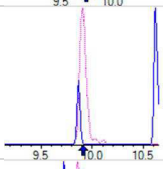
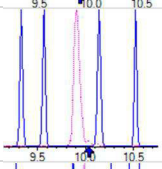
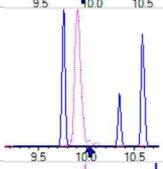
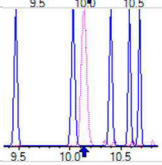
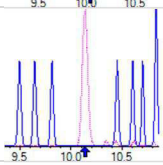
Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-01RE1	File ID:	S2022-12-14A (13)
Sampled:	12/08/22 15:25	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 13:53
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

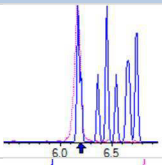
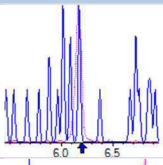
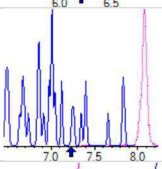
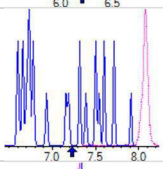
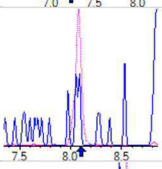
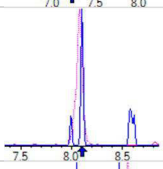
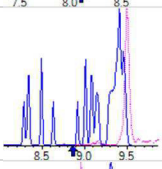
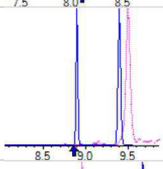
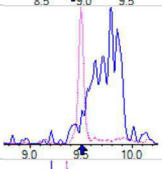
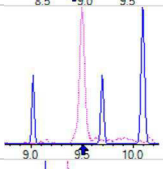
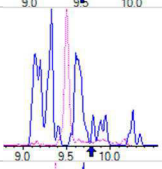
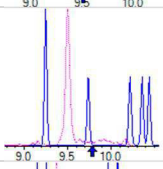
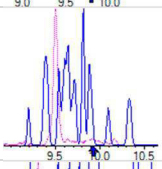
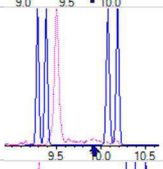
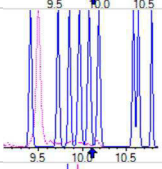
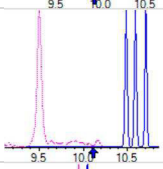
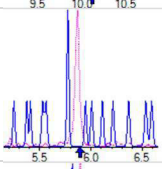
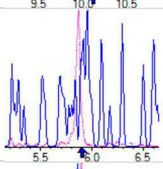
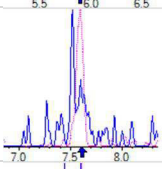
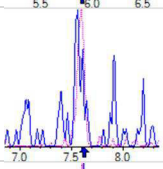
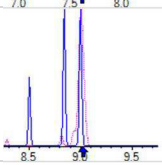
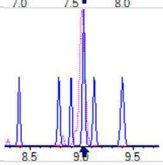
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

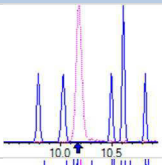
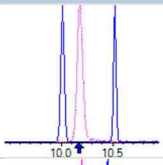
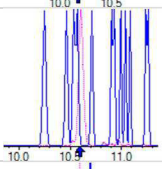
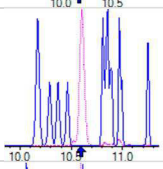
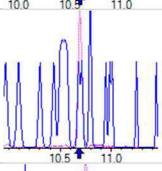
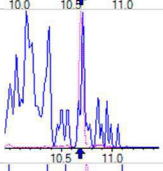
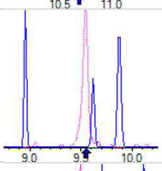
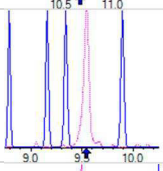
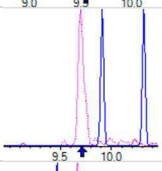
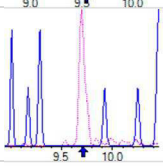
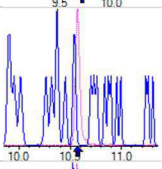
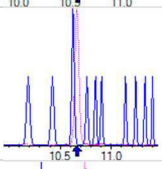
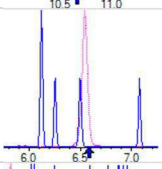
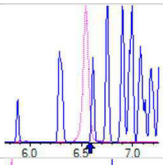
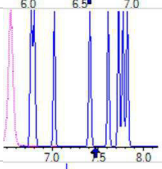
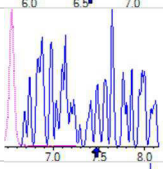
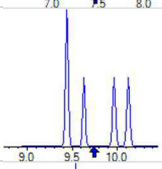
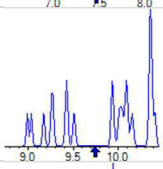
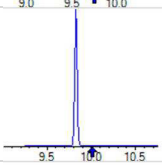
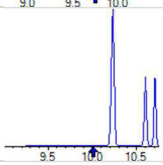
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

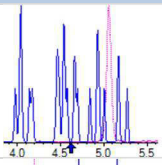
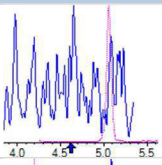
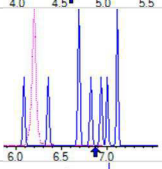
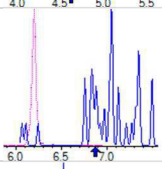
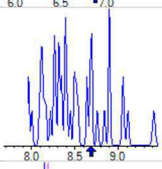
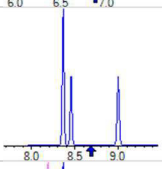
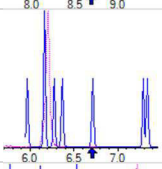
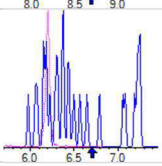
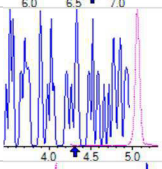
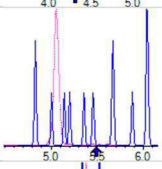
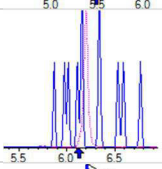
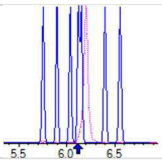
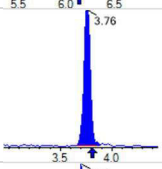
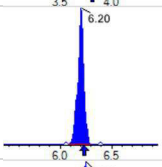
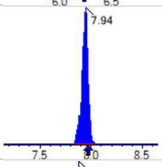
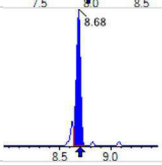
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

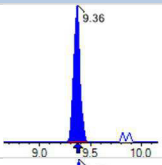
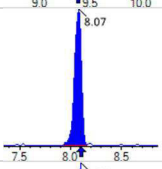
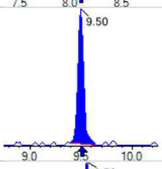
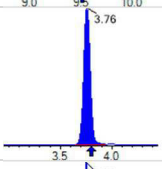
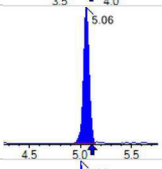
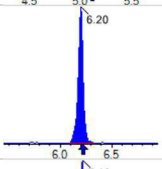
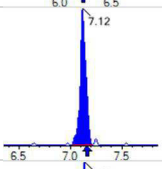
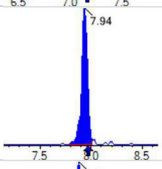
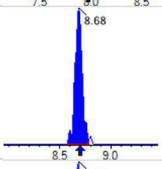
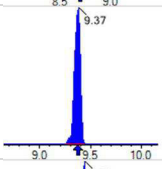
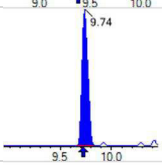
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 8271	(3.76 , N/A) (N/A , 0.05 , N/A)	253.3	N/A	0.6817 [1.0000]	68.2% { 8.6% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 12646	(6.20 , N/A) (N/A , 0.03 , N/A)	371.4	N/A	0.6930 [1.0000]	69.3% { 7.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 10605	(7.94 , N/A) (N/A , 0.02 , N/A)	65.8	N/A	0.6075 [1.0000]	60.8% { 7.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 9085	(8.68 , N/A) (N/A , 0.01 , N/A)	300.1	N/A	0.6686 [1.0000]	66.9% { 7.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

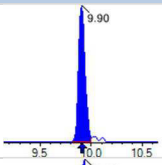
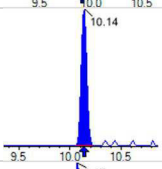
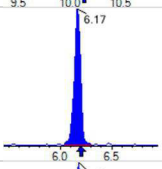
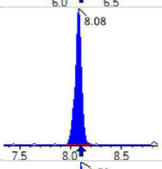
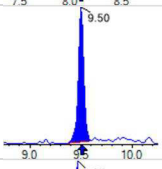
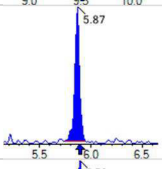
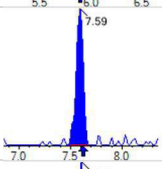
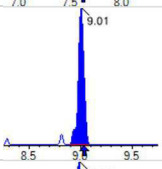
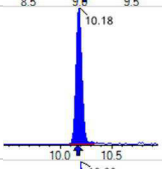
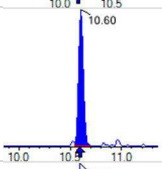
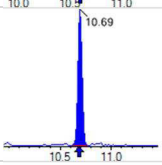
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 8154	(9.36 , N/A) (N/A , 0.02 , N/A)	499.6	N/A	0.5877 [1.0000]	58.8% { 6.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 21581	(8.07 , N/A) (N/A , 0.01 , N/A)	359.5	N/A	0.6687 [1.0000]	66.9% { 7.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 21482	(9.50 , N/A) (N/A , 0.01 , N/A)	111.0	N/A	0.8531 [1.0000]	85.3% { 8.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 57317	(3.76 , N/A) (N/A , 0.04 , N/A)	737.1	N/A	0.9091 [0.8000]	113.6% { 8.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 32872	(5.06 , N/A) (N/A , 0.03 , N/A)	517.3	N/A	0.4694 [0.4000]	117.4% { 10.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 30483	(6.20 , N/A) (N/A , 0.03 , N/A)	456.1	N/A	0.2860 [0.2000]	143.0% { 11.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 18988	(7.12 , N/A) (N/A , 0.02 , N/A)	298.5	N/A	0.2052 [0.2000]	102.6% { 8.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 22251	(7.94 , N/A) (N/A , 0.01 , N/A)	226.5	N/A	0.2736 [0.2000]	136.8% { 9.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 7871	(8.68 , N/A) (N/A , 0.02 , N/A)	4219.7	N/A	0.1125 [0.1000]	112.5% { 7.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 11307	(9.37 , N/A) (N/A , 0.02 , N/A)	154.2	N/A	0.1446 [0.1000]	144.6% { 9.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 20609	(9.74 , N/A) (N/A , 0.01 , N/A)	211.9	N/A	0.1919 [0.1000]	191.9% { 11.8% }			S2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

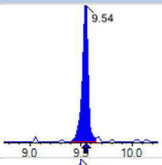
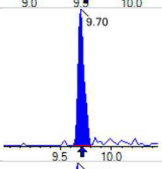
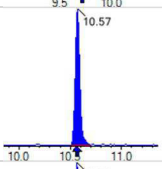
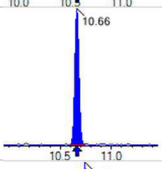
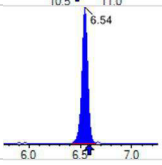
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 19377	(9.90 , N/A) (N/A , 0.00 , N/A)	235.5	N/A	0.1467 [0.1000]	146.7% { 9.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 13813	(10.14 , N/A) (N/A , 0.00 , N/A)	175.8	N/A	0.1666 [0.1000]	166.6% { 10.2% }			S2,
13C3_PFBS_EIS	(302.0 / 80.0) 60968	(6.17 , N/A) (N/A , 0.03 , N/A)	357.3	N/A	0.2455 [0.2000]	122.8% { 9.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 41157	(8.08 , N/A) (N/A , 0.02 , N/A)	359.4	N/A	0.2945 [0.2000]	147.3% { 10.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 56164	(9.50 , N/A) (N/A , 0.01 , N/A)	104.7	N/A	0.2100 [0.2000]	105.0% { 9.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 8451	(5.87 , N/A) (N/A , 0.03 , N/A)	112.9	N/A	0.5823 [0.4000]	145.6% { 11.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 9413	(7.59 , N/A) (N/A , 0.02 , N/A)	70.9	N/A	0.5305 [0.4000]	132.6% { 9.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 11589	(9.01 , N/A) (N/A , 0.01 , N/A)	241.7	N/A	0.6546 [0.4000]	163.7% { 11.9% }			S2,
13C8_PFOSA_EIS	(506.0 / 78.0) 90144	(10.18 , N/A) (N/A , 0.01 , N/A)	237.8	N/A	0.2228 [0.2000]	111.4% { 10.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 13189	(10.60 , N/A) (N/A , 0.00 , N/A)	200.1	N/A	0.1270 [0.2000]	63.5% { 5.6% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 13515	(10.69 , N/A) (N/A , 0.00 , N/A)	271.6	N/A	0.1500 [0.2000]	75.0% { 7.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-01RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (13)
Acquired: 2022/12/14 - 13:53

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 28943	(9.54 , N/A) (N/A , 0.02 , N/A)	118.8	N/A	0.4572 [0.4000]	114.3% { 11.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 28455	(9.70 , N/A) (N/A , 0.00 , N/A)	94.5	N/A	0.4968 [0.4000]	124.2% { 11.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 35664	(10.57 , N/A) (N/A , 0.00 , N/A)	493.0	N/A	1.7914 [2.0000]	89.6% { 8.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 20532	(10.66 , N/A) (N/A , 0.00 , N/A)	362.5	N/A	2.0582 [2.0000]	102.9% { 9.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 61740	(6.54 , N/A) (N/A , 0.02 , N/A)	521.3	N/A	0.9458 [0.8000]	118.2% { 9.3% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW06-WQEB01-2212W1

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-02	File ID:	S2022-12-14A (14)
Sampled:	12/08/22 17:10	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 14:06
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
PFBA	0.00080 U	0.0016	0.00080	0.00021	
PFPEA	0.00040 U	0.00080	0.00040	0.000065	
PFHXA	0.00020 U	0.00040	0.00020	0.000055	
PFHPA	0.00020 U	0.00040	0.00020	0.000041	
PFOA	0.00020 U	0.00040	0.00020	0.00015	IR2,
PFNA	0.00020 U	0.00040	0.00020	0.000082	
PFDA	0.00020 U	0.00040	0.00020	0.00010	
PFUnA	0.00020 U	0.00040	0.00020	0.00016	
PFDOA	0.00020 U	0.00040	0.00020	0.00011	
PFTRDA	0.00030 U	0.00040	0.00030	0.00020	
PFTEDA	0.00020 U	0.00040	0.00020	0.00020	
PFBS	0.00020 U	0.00040	0.00020	0.000037	
PFPES	0.00020 U	0.00040	0.00020	0.000063	
PFHXS	0.00020 U	0.00040	0.00020	0.000032	
PFHPS	0.00020 U	0.00040	0.00020	0.000051	
PFOS	0.00019 J	0.00040	0.00020	0.000064	
PFNS	0.00020 U	0.00040	0.00020	0.00012	
PFDS	0.00020 U	0.00040	0.00020	0.00015	
PFDOS	0.00020 U	0.00040	0.00020	0.00012	
4:2FTS	0.00080 U	0.0016	0.00080	0.00029	
6:2FTS	0.00080 U	0.0016	0.00080	0.00031	
8:2FTS	0.00080 U	0.0016	0.00080	0.000082	
PFOSA	0.00020 U	0.00040	0.00020	0.00010	
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047	
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041	
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011	
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011	
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010	
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010	
HFPO-DA	0.00040 U	0.00080	0.00040	0.00017	

FORM I
ANALYSIS DATA SHEET

AF-RHMW06-WQEB01-2212W1

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-02	File ID:	S2022-12-14A (14)
Sampled:	12/08/22 17:10	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 14:06
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

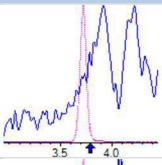
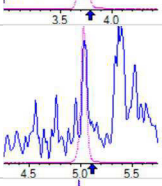
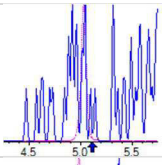
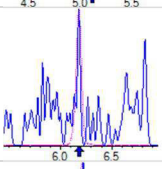
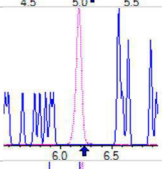
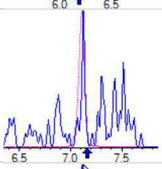
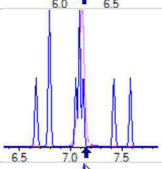
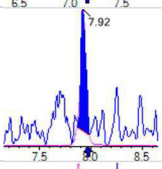
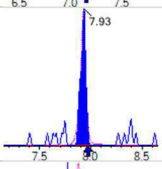
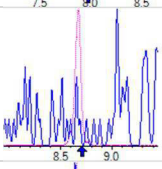
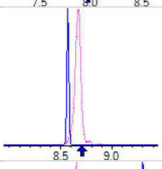
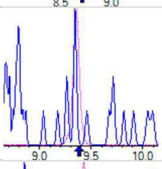
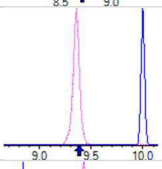
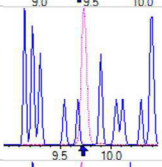
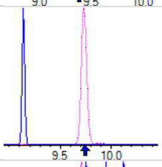
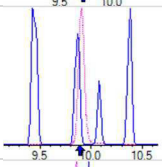
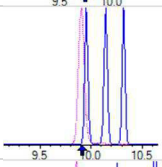
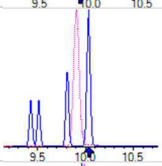
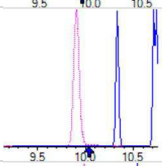
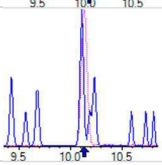
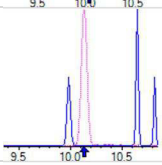
COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
ADONA	0.00040 U	0.00080	0.00040	0.00012	
PFEESA	0.00040 U	0.00080	0.00040	0.00011	
PFMPA	0.00040 U	0.00080	0.00040	0.000054	
PFMBA	0.00040 U	0.00080	0.00040	0.000091	
NFDHA	0.00040 U	0.00080	0.00040	0.00030	
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021	
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021	
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057	
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044	
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 3205 (413.0 / 169.0) 2078	(7.92 , 1.00) (0.00 , N/A , -0.4)	17.3 47.0	0.6484 193.2 222.6	0.0237	N/A			IR2,
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
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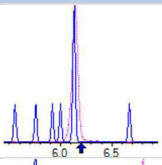
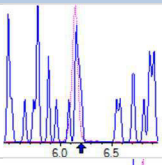
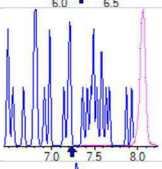
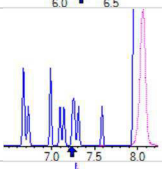
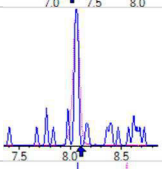
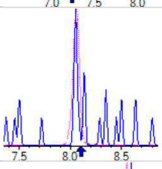
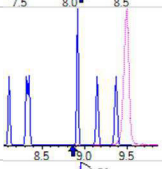
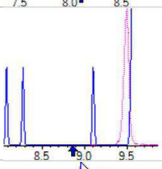
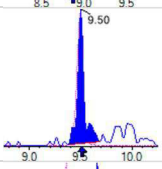
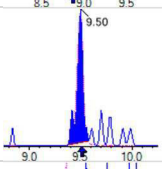
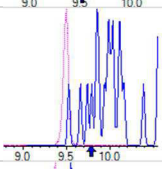
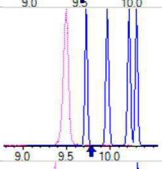
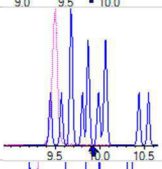
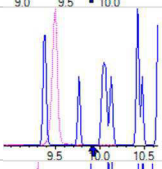
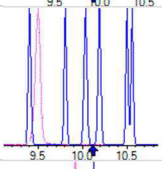
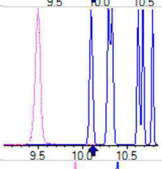
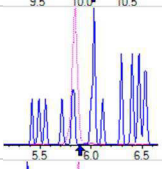
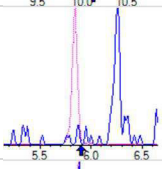
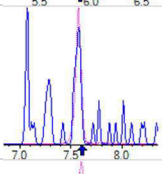
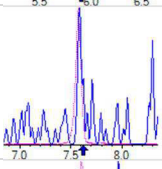
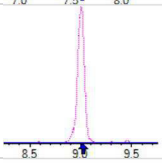
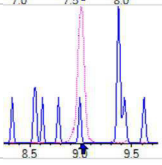
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 18369 (499.0 / 99.0) 3912	(9.50 , 1.00) (0.01 , N/A , 0.1)	41.9 33.4	0.2130 92.8 83.5	0.0469	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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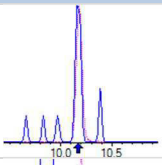
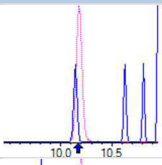
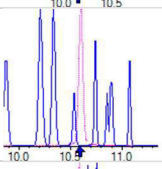
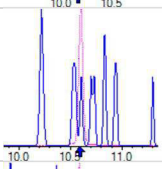
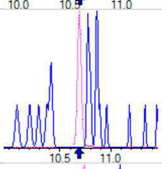
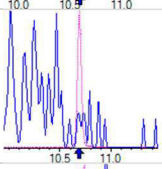
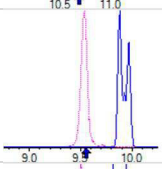
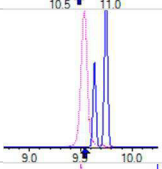
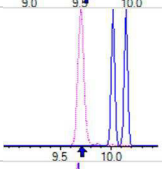
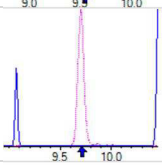
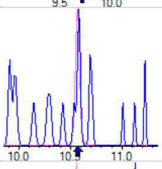
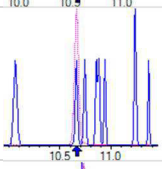
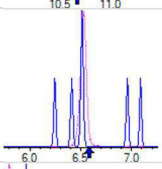
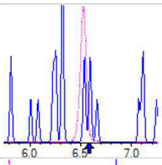
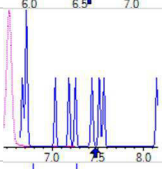
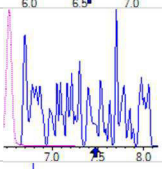
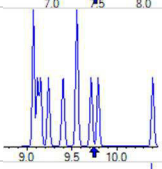
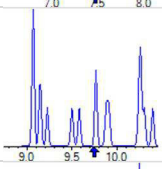
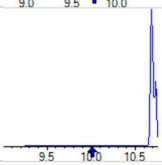
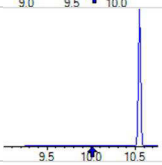
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

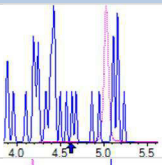
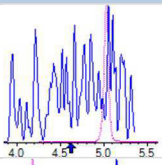
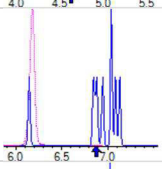
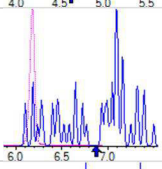
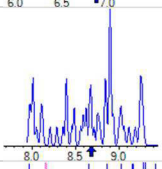
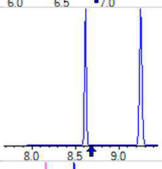
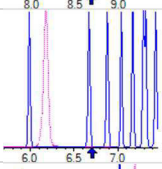
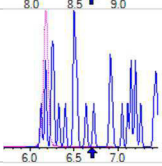
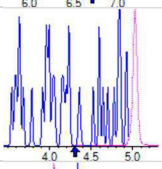
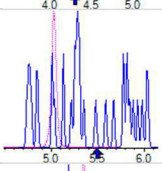
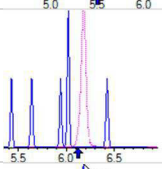
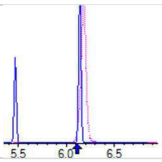
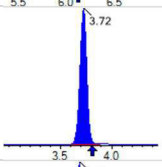
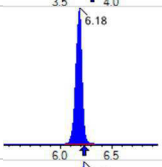
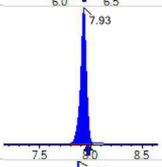
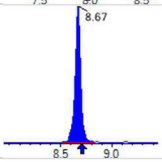
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

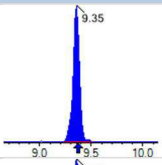
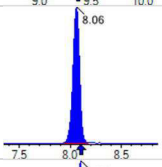
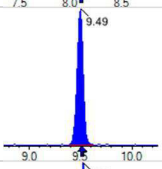
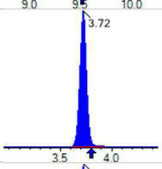
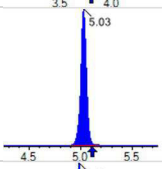
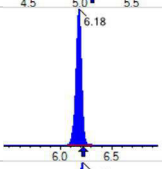
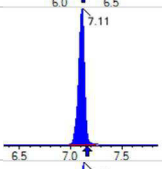
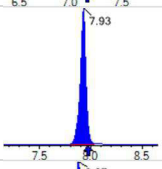
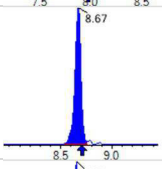
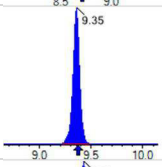
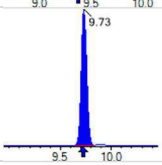
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 82873	(3.72 , N/A) (N/A , 0.01 , N/A)	604.4	N/A	0.6830 [1.0000]	68.3% { 86.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 160714	(6.18 , N/A) (N/A , 0.01 , N/A)	526.7	N/A	0.8807 [1.0000]	88.1% { 91.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 150086	(7.93 , N/A) (N/A , 0.01 , N/A)	511.5	N/A	0.8598 [1.0000]	86.0% { 103.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 109712	(8.67 , N/A) (N/A , 0.00 , N/A)	360.6	N/A	0.8074 [1.0000]	80.7% { 93.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

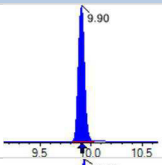
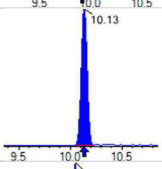
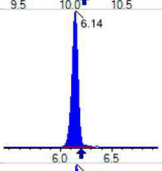
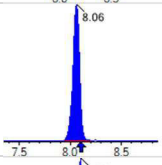
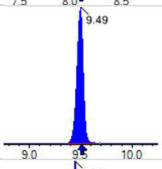
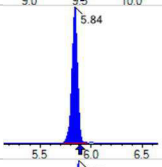
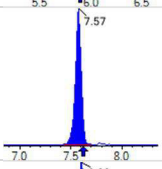
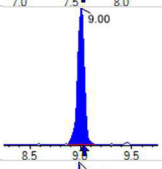
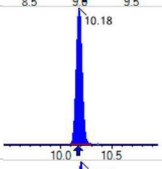
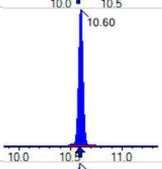
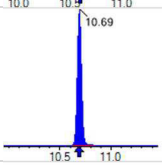
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 112926	(9.35 , N/A) (N/A , 0.01 , N/A)	781.8	N/A	0.8138 [1.0000]	81.4% { 86.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 239192	(8.06 , N/A) (N/A , 0.00 , N/A)	549.2	N/A	0.7411 [1.0000]	74.1% { 84.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 230565	(9.49 , N/A) (N/A , 0.00 , N/A)	403.9	N/A	0.9156 [1.0000]	91.6% { 90.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 645188	(3.72 , N/A) (N/A , 0.01 , N/A)	872.1	N/A	10.2133 [8.0000]	127.7% { 100.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 387432	(5.03 , N/A) (N/A , 0.00 , N/A)	839.6	N/A	4.3531 [4.0000]	108.8% { 118.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 370264	(6.18 , N/A) (N/A , 0.01 , N/A)	769.9	N/A	2.7337 [2.0000]	136.7% { 133.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 268959	(7.11 , N/A) (N/A , 0.00 , N/A)	597.6	N/A	2.2875 [2.0000]	114.4% { 115.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 271016	(7.93 , N/A) (N/A , 0.00 , N/A)	496.6	N/A	2.3549 [2.0000]	117.7% { 116.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 101969	(8.67 , N/A) (N/A , 0.01 , N/A)	242.9	N/A	1.2064 [1.0000]	120.6% { 99.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 152654	(9.35 , N/A) (N/A , 0.01 , N/A)	452.3	N/A	1.4095 [1.0000]	141.0% { 125.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 240909	(9.73 , N/A) (N/A , 0.00 , N/A)	483.9	N/A	1.6196 [1.0000]	162.0% { 137.9% }			S2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

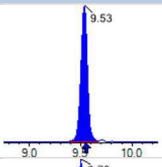
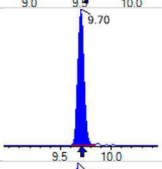
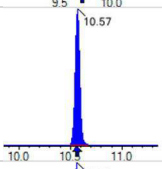
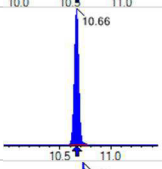
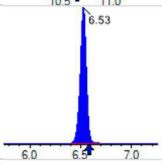
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 235580	(9.90 , N/A) (N/A , 0.00 , N/A)	336.5	N/A	1.2879 [1.0000]	128.8% { 112.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 165679	(10.13 , N/A) (N/A , 0.00 , N/A)	349.9	N/A	1.4425 [1.0000]	144.3% { 122.8% }			
13C3_PFBS_EIS	(302.0 / 80.0) 689836	(6.14 , N/A) (N/A , 0.00 , N/A)	611.6	N/A	2.5065 [2.0000]	125.3% { 101.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 424613	(8.06 , N/A) (N/A , 0.00 , N/A)	700.2	N/A	2.7415 [2.0000]	137.1% { 112.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 712115	(9.49 , N/A) (N/A , 0.00 , N/A)	485.9	N/A	2.4807 [2.0000]	124.0% { 119.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 90645	(5.84 , N/A) (N/A , 0.01 , N/A)	679.4	N/A	5.6352 [4.0000]	140.9% { 121.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 112124	(7.57 , N/A) (N/A , 0.00 , N/A)	487.8	N/A	5.7010 [4.0000]	142.5% { 111.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 100270	(9.00 , N/A) (N/A , 0.00 , N/A)	439.9	N/A	5.1101 [4.0000]	127.8% { 103.4% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 917562	(10.18 , N/A) (N/A , 0.01 , N/A)	768.2	N/A	2.1131 [2.0000]	105.7% { 103.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 125973	(10.60 , N/A) (N/A , 0.00 , N/A)	650.1	N/A	1.1302 [2.0000]	56.5% { 53.9% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 108976	(10.69 , N/A) (N/A , 0.00 , N/A)	1091.8	N/A	1.1269 [2.0000]	56.3% { 57.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (14)
Acquired: 2022/12/14 - 14:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 309982	(9.53 , N/A) (N/A , 0.01 , N/A)	304.9	N/A	4.5622 [4.0000]	114.1% { 122.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 309660	(9.70 , N/A) (N/A , 0.00 , N/A)	380.8	N/A	5.0367 [4.0000]	125.9% { 126.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 387645	(10.57 , N/A) (N/A , 0.00 , N/A)	1045.9	N/A	18.1414 [20.0000]	90.7% { 95.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 207867	(10.66 , N/A) (N/A , 0.00 , N/A)	1562.0	N/A	19.4141 [20.0000]	97.1% { 95.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 775965	(6.53 , N/A) (N/A , 0.00 , N/A)	830.3	N/A	9.3530 [8.0000]	116.9% { 116.8% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW06-WQEB01-2212W1

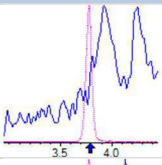
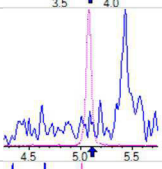
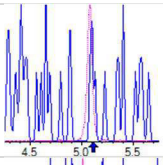
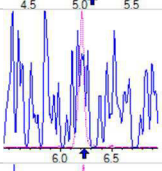
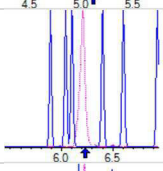
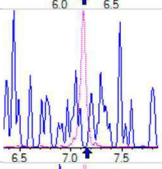
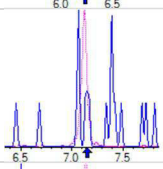
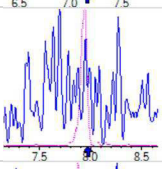
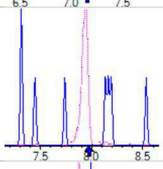
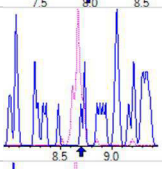
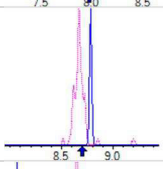
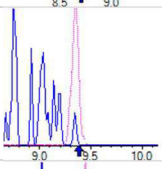
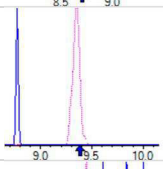
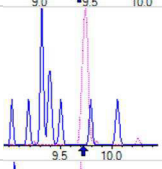
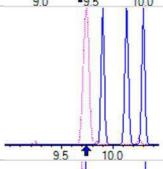
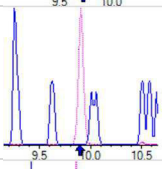
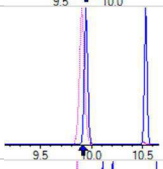
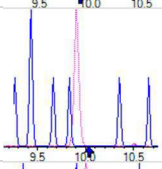
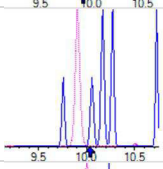
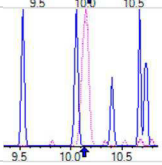
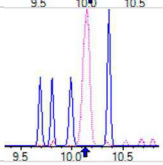
Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-02RE1	File ID:	S2022-12-14A (15)
Sampled:	12/08/22 17:10	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 14:19
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

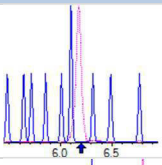
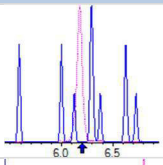
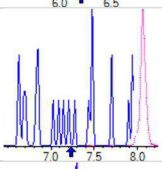
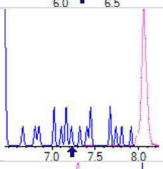
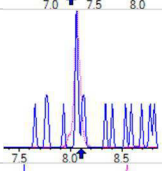
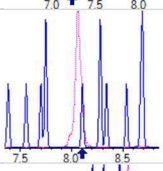
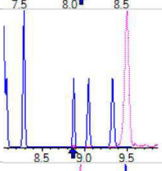
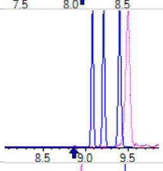
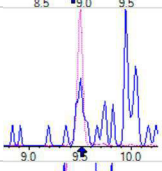
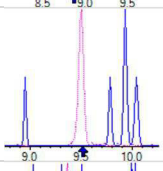
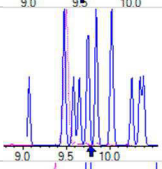
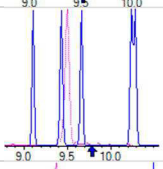
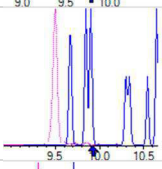
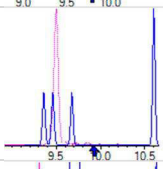
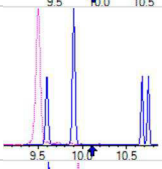
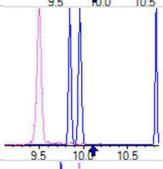
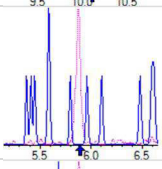
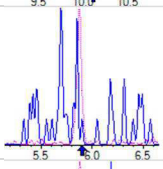
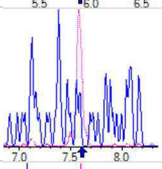
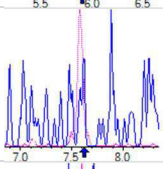
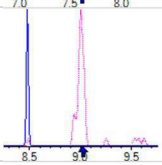
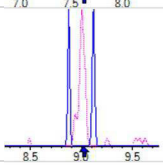
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

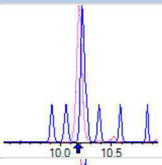
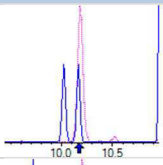
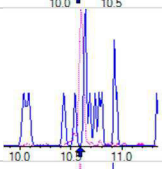
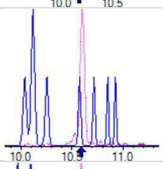
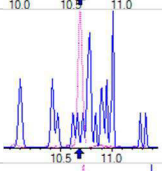
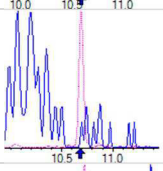
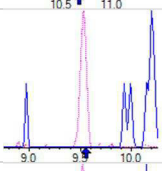
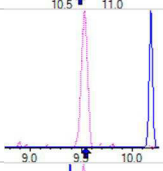
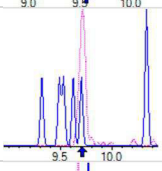
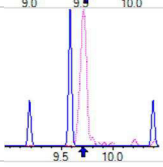
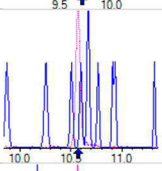
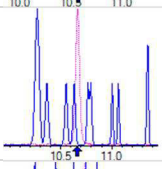
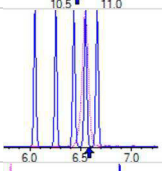
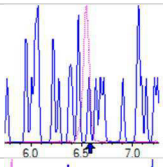
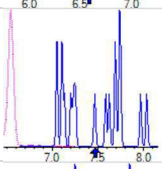
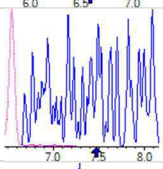
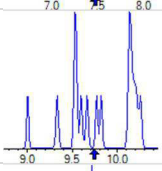
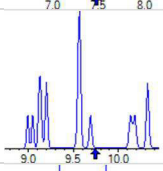
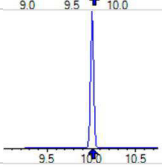
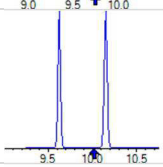
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

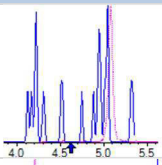
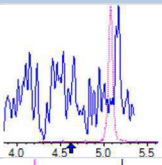
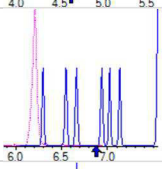
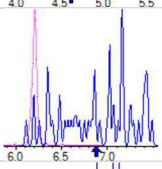
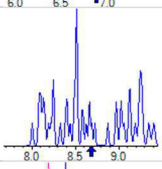
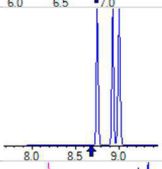
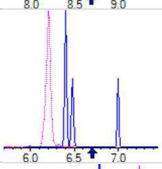
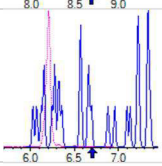
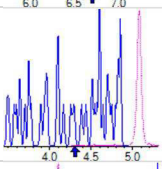
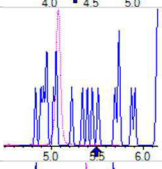
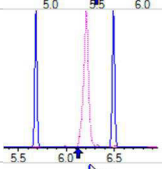
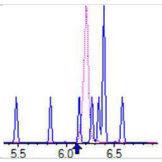
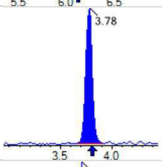
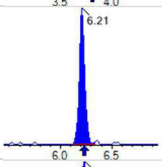
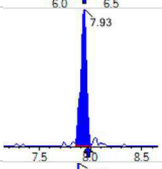
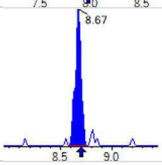
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

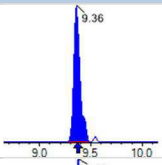
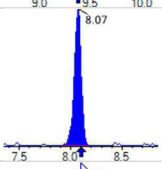
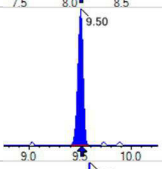
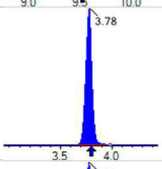
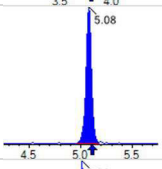
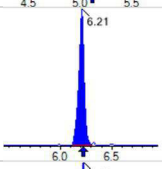
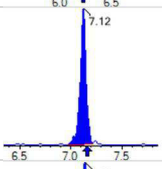
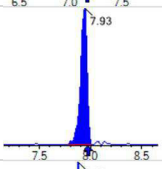
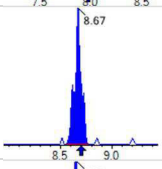
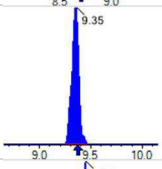
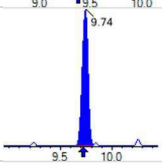
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 7474	(3.78 , N/A) (N/A , 0.06 , N/A)	204.0	N/A	0.6160 [1.0000]	61.6% { 7.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 13504	(6.21 , N/A) (N/A , 0.03 , N/A)	205.5	N/A	0.7400 [1.0000]	74.0% { 7.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 13973	(7.93 , N/A) (N/A , 0.01 , N/A)	183.5	N/A	0.8005 [1.0000]	80.0% { 9.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 7407	(8.67 , N/A) (N/A , 0.01 , N/A)	113.5	N/A	0.5451 [1.0000]	54.5% { 6.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

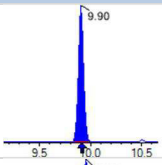
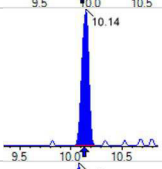
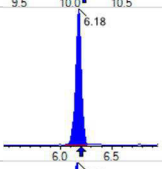
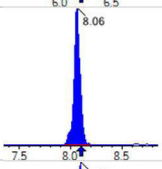
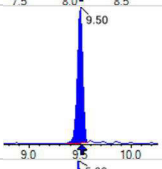
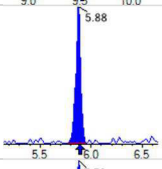
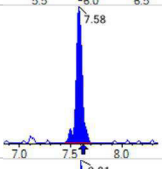
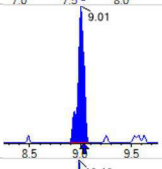
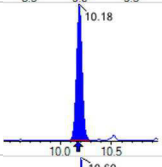
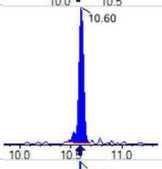
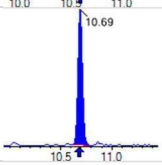
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 14516	(9.36 , N/A) (N/A , 0.02 , N/A)	3760.9	N/A	1.0462 [1.0000]	104.6% { 11.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 20913	(8.07 , N/A) (N/A , 0.01 , N/A)	256.2	N/A	0.6480 [1.0000]	64.8% { 7.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 18756	(9.50 , N/A) (N/A , 0.01 , N/A)	338.0	N/A	0.7448 [1.0000]	74.5% { 7.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 61287	(3.78 , N/A) (N/A , 0.06 , N/A)	888.2	N/A	1.0757 [0.8000]	134.5% { 9.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 36146	(5.08 , N/A) (N/A , 0.05 , N/A)	565.1	N/A	0.4833 [0.4000]	120.8% { 11.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 31866	(6.21 , N/A) (N/A , 0.03 , N/A)	366.5	N/A	0.2800 [0.2000]	140.0% { 11.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 22831	(7.12 , N/A) (N/A , 0.02 , N/A)	276.1	N/A	0.2311 [0.2000]	115.6% { 9.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 26873	(7.93 , N/A) (N/A , 0.01 , N/A)	273.0	N/A	0.2508 [0.2000]	125.4% { 11.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 9496	(8.67 , N/A) (N/A , 0.01 , N/A)	101.2	N/A	0.1664 [0.1000]	166.4% { 9.2% }			S2,
13C6_PFDA_EIS	(519.0 / 474.0) 10895	(9.35 , N/A) (N/A , 0.00 , N/A)	84.0	N/A	0.0783 [0.1000]	78.3% { 8.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 21755	(9.74 , N/A) (N/A , 0.01 , N/A)	288.8	N/A	0.1138 [0.1000]	113.8% { 12.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

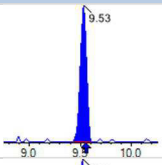
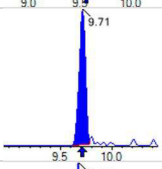
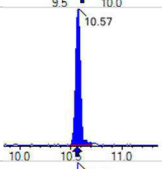
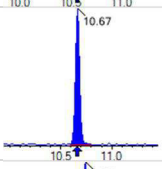
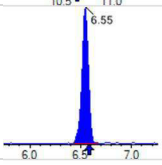
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 26417	(9.90 , N/A) (N/A , 0.00 , N/A)	8066.8	N/A	0.1123 [0.1000]	112.3% { 12.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 16015	(10.14 , N/A) (N/A , 0.01 , N/A)	92.2	N/A	0.1085 [0.1000]	108.5% { 11.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 62504	(6.18 , N/A) (N/A , 0.03 , N/A)	396.2	N/A	0.2598 [0.2000]	129.9% { 9.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 34016	(8.06 , N/A) (N/A , 0.00 , N/A)	426.8	N/A	0.2512 [0.2000]	125.6% { 9.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 59722	(9.50 , N/A) (N/A , 0.01 , N/A)	244.3	N/A	0.2557 [0.2000]	127.9% { 10.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 8510	(5.88 , N/A) (N/A , 0.04 , N/A)	105.2	N/A	0.6051 [0.4000]	151.3% { 11.4% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 10752	(7.58 , N/A) (N/A , 0.01 , N/A)	141.8	N/A	0.6253 [0.4000]	156.3% { 10.7% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 9948	(9.01 , N/A) (N/A , 0.01 , N/A)	104.0	N/A	0.5799 [0.4000]	145.0% { 10.3% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 82428	(10.18 , N/A) (N/A , 0.01 , N/A)	339.0	N/A	0.2334 [0.2000]	116.7% { 9.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 12153	(10.60 , N/A) (N/A , 0.00 , N/A)	147.2	N/A	0.1340 [0.2000]	67.0% { 5.2% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 9398	(10.69 , N/A) (N/A , 0.00 , N/A)	215.5	N/A	0.1195 [0.2000]	59.7% { 5.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-02RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (15)
Acquired: 2022/12/14 - 14:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 26782	(9.53 , N/A) (N/A , 0.00 , N/A)	155.0	N/A	0.4845 [0.4000]	121.1% { 10.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 23329	(9.71 , N/A) (N/A , 0.02 , N/A)	83.7	N/A	0.4665 [0.4000]	116.6% { 9.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 35972	(10.57 , N/A) (N/A , 0.00 , N/A)	413.1	N/A	2.0695 [2.0000]	103.5% { 8.9% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 16206	(10.67 , N/A) (N/A , 0.00 , N/A)	387.2	N/A	1.8607 [2.0000]	93.0% { 7.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 59790	(6.55 , N/A) (N/A , 0.02 , N/A)	410.1	N/A	0.8577 [0.8000]	107.2% { 9.0% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW04-WGN01LF-2212W1

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-03	File ID:	S2022-12-14A (16)
Sampled:	12/07/22 21:45	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 14:32
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
PFBA	0.00062 J	0.0016	0.00080	0.00021	
PFPEA	0.00072 J	0.00080	0.00040	0.000065	
PFHXA	0.00033 J	0.00040	0.00020	0.000055	
PFHPA	0.00025 J	0.00040	0.00020	0.000041	
PFOA	0.00016 J	0.00040	0.00020	0.00015	
PFNA	0.00020 U	0.00040	0.00020	0.000082	
PFDA	0.00020 U	0.00040	0.00020	0.00010	
PFUnA	0.00020 U	0.00040	0.00020	0.00016	
PFDOA	0.00020 U	0.00040	0.00020	0.00011	
PFTRDA	0.00030 U	0.00040	0.00030	0.00020	
PFTEDA	0.00020 U	0.00040	0.00020	0.00020	
PFBS	0.00020 U	0.00040	0.00020	0.000037	
PFPES	0.00020 U	0.00040	0.00020	0.000063	
PFHXS	0.00020 U	0.00040	0.00020	0.000032	
PFHPS	0.00020 U	0.00040	0.00020	0.000051	
PFOS	0.00016 J	0.00040	0.00020	0.000064	
PFNS	0.00020 U	0.00040	0.00020	0.00012	
PFDS	0.00020 U	0.00040	0.00020	0.00015	
PFDOS	0.00020 U	0.00040	0.00020	0.00012	
4:2FTS	0.00080 U	0.0016	0.00080	0.00029	
6:2FTS	0.0069	0.0016	0.00080	0.00031	
8:2FTS	0.00080 U	0.0016	0.00080	0.000082	
PFOSA	0.00020 U	0.00040	0.00020	0.00010	
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047	
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041	
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011	
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011	
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010	
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010	
HFPO-DA	0.00040 U	0.00080	0.00040	0.00017	

FORM I
ANALYSIS DATA SHEET

AF-RHMW04-WGN01LF-2212W1

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-03	File ID:	S2022-12-14A (16)
Sampled:	12/07/22 21:45	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 14:32
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

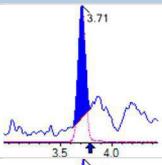
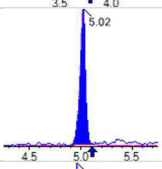
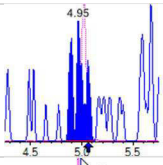
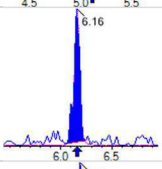
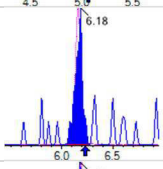
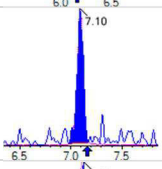
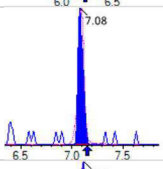
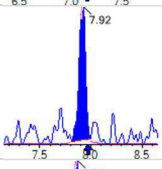
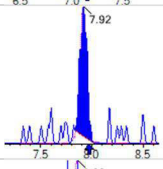
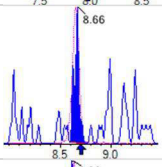
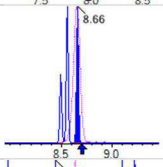
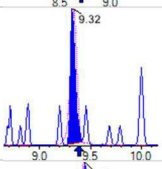
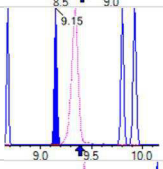
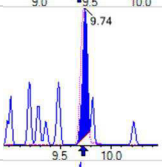
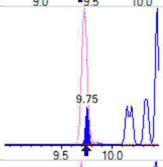
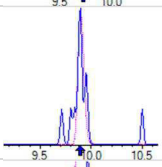
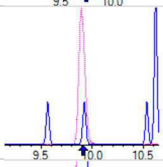
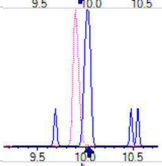
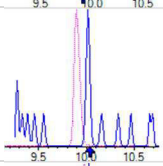
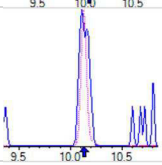
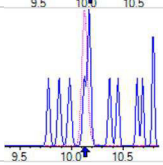
COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
ADONA	0.00040 U	0.00080	0.00040	0.00012	
PFEESA	0.00040 U	0.00080	0.00040	0.00011	
PFMPA	0.00040 U	0.00080	0.00040	0.000054	
PFMBA	0.00040 U	0.00080	0.00040	0.000091	
NFDHA	0.00040 U	0.00080	0.00040	0.00030	
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021	
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021	
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057	
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044	
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

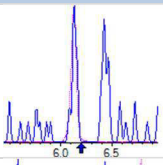
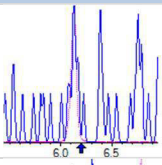
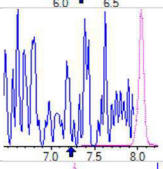
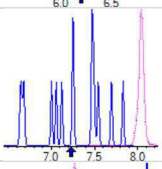
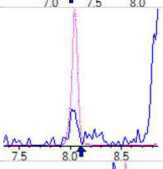
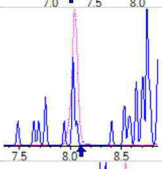
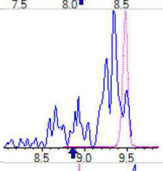
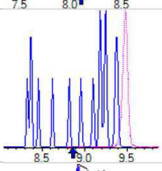
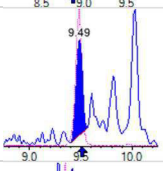
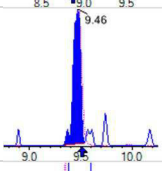
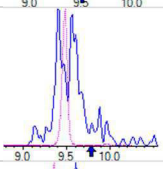
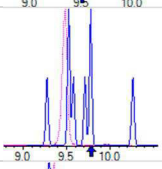
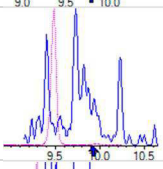
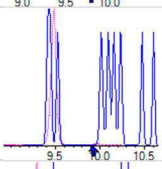
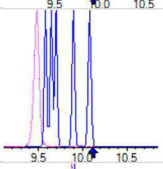
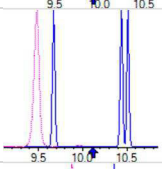
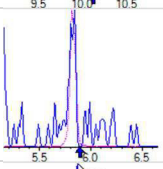
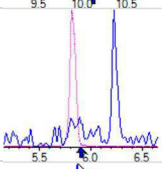
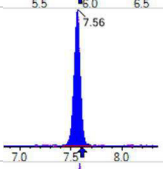
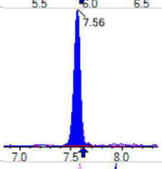
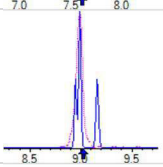
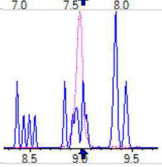
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 9595	(3.71 , 1.00) (0.00 , N/A , 0.0)	25.5	N/A 0.0 0.0	0.1558	N/A			
PFPeA	(262.9 / 219.0) 19081 (262.9 / 69.0) 299	(5.02 , 1.00) (0.00 , N/A , 4.1)	162.3 24.3	0.0157 124.7 133.4	0.1802	N/A			
PFHxA	(313.0 / 269.0) 13454 (313.0 / 119.0) 1430	(6.16 , 1.00) (0.00 , N/A , -0.9)	53.0 18.6	0.1063 114.8 99.8	0.0834	N/A			
PFHpA	(363.0 / 319.0) 8629 (363.0 / 169.0) 2319	(7.10 , 1.00) (0.00 , N/A , 0.8)	33.4 54.0	0.2688 86.4 83.0	0.0620	N/A			
PFOA	(413.0 / 369.0) 6810 (413.0 / 169.0) 1879	(7.92 , 1.00) (0.01 , N/A , -0.2)	26.5 23.8	0.2758 82.2 94.7	0.0395	N/A			
PFNA	(463.0 / 419.0) 2169 (463.0 / 169.0) 272	(8.66 , 1.00) (0.01 , N/A , 0.2)	13.9 20.3	0.1255 71.5 61.5	0.0165	N/A			
PFDA	(513.0 / 469.0) 3152 (513.0 / 169.0) 239	(9.32 , 1.00) (-0.01 , N/A , 10.6)	18.0 54.4	0.0759 75.4 58.0	0.0188	N/A			
PFUnA	(563.0 / 519.0) 2312 (563.0 / 169.0) 259	(9.74 , 1.00) (0.02 , N/A , -0.6)	16.3 11.4	0.1120 122.3 129.0	0.0130	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

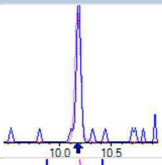
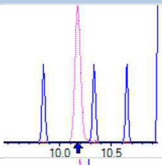
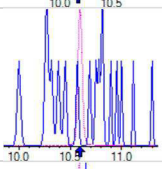
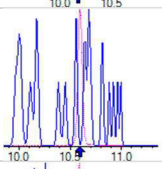
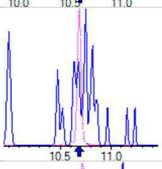
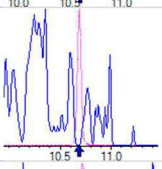
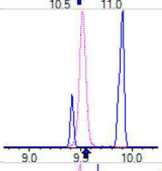
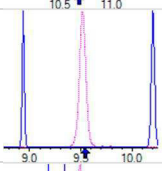
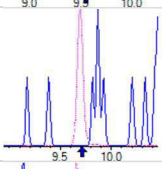
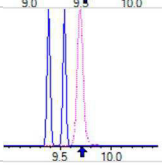
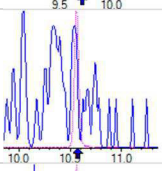
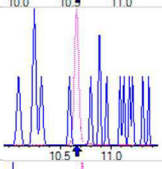
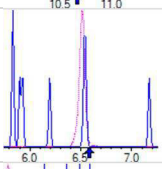
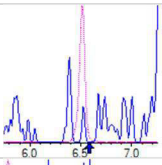
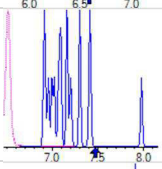
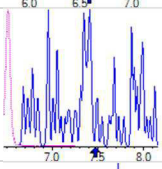
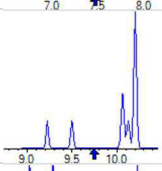
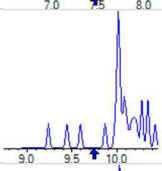
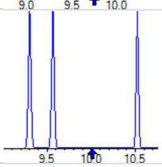
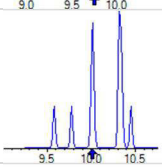
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 18501 (499.0 / 99.0) 5486	(9.49 , 1.00) (0.01 , N/A , 1.4)	13.7 46.4	0.2966 129.2 116.3	0.0405	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 119662 (427.0 / 81.0) 84603	(7.56 , 1.00) (0.00 , N/A , 0.0)	439.3 313.0	0.7070 108.8 95.3	1.7254	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

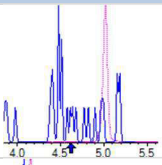
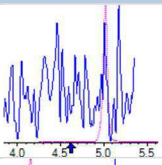
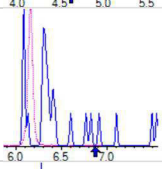
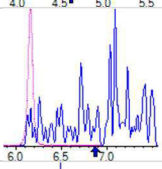
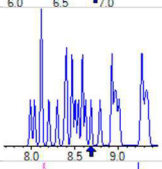
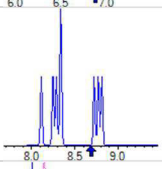
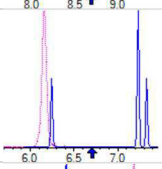
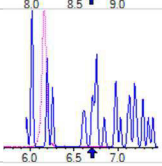
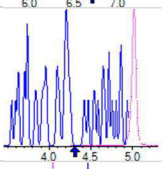
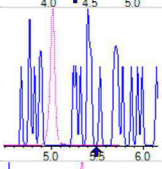
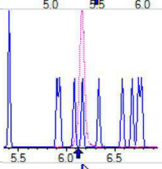
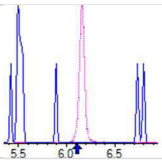
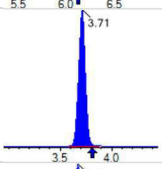
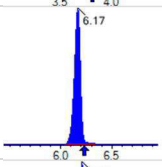
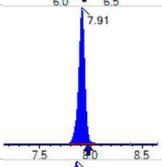
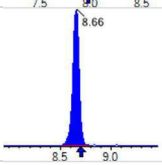
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

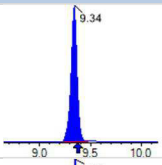
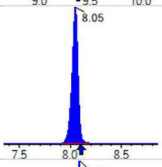
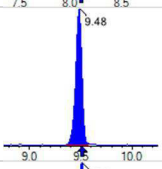
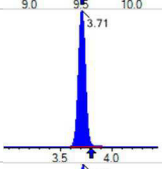
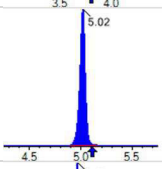
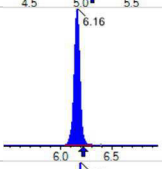
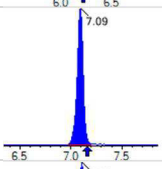
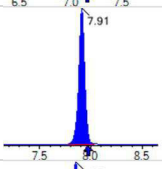
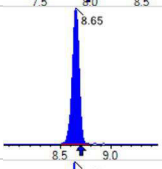
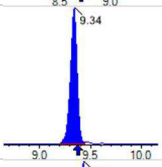
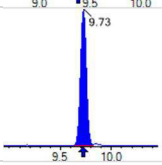
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 90693	(3.71 , N/A) (N/A , 0.00 , N/A)	938.7	N/A	0.7475 [1.0000]	74.7% { 94.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 152733	(6.17 , N/A) (N/A , -0.01 , N/A)	668.1	N/A	0.8370 [1.0000]	83.7% { 87.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 172909	(7.91 , N/A) (N/A , -0.01 , N/A)	743.3	N/A	0.9905 [1.0000]	99.1% { 119.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 147340	(8.66 , N/A) (N/A , -0.01 , N/A)	404.0	N/A	1.0843 [1.0000]	108.4% { 125.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

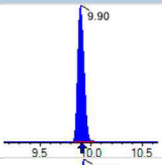
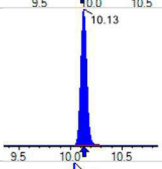
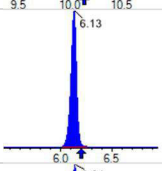
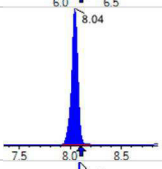
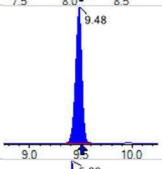
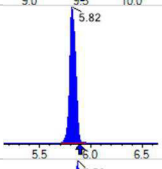
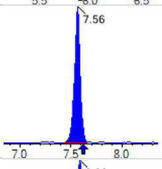
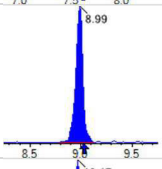
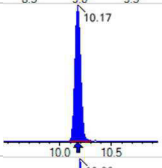
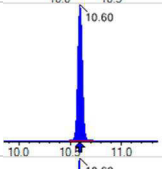
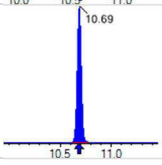
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 157197	(9.34 , N/A) (N/A , -0.01 , N/A)	347.2	N/A	1.1329 [1.0000]	113.3% { 120.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 287770	(8.05 , N/A) (N/A , -0.01 , N/A)	699.5	N/A	0.8916 [1.0000]	89.2% { 101.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 292603	(9.48 , N/A) (N/A , -0.01 , N/A)	447.7	N/A	1.1619 [1.0000]	116.2% { 114.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 701152	(3.71 , N/A) (N/A , 0.00 , N/A)	1065.9	N/A	10.1422 [8.0000]	126.8% { 109.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 477226	(5.02 , N/A) (N/A , -0.01 , N/A)	699.6	N/A	5.6422 [4.0000]	141.1% { 146.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 364097	(6.16 , N/A) (N/A , -0.01 , N/A)	520.6	N/A	2.8287 [2.0000]	141.4% { 131.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 300875	(7.09 , N/A) (N/A , -0.01 , N/A)	566.2	N/A	2.6927 [2.0000]	134.6% { 129.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 344852	(7.91 , N/A) (N/A , -0.01 , N/A)	761.6	N/A	2.6010 [2.0000]	130.0% { 148.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 144266	(8.65 , N/A) (N/A , -0.01 , N/A)	425.1	N/A	1.2709 [1.0000]	127.1% { 140.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 165580	(9.34 , N/A) (N/A , -0.01 , N/A)	367.5	N/A	1.0983 [1.0000]	109.8% { 135.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 204596	(9.73 , N/A) (N/A , -0.01 , N/A)	485.5	N/A	0.9881 [1.0000]	98.8% { 117.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

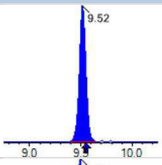
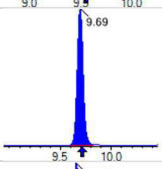
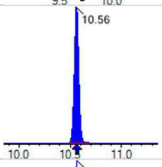
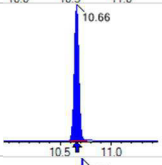
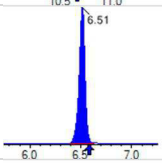
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 288403	(9.90 , N/A) (N/A , -0.01 , N/A)	642.8	N/A	1.1326 [1.0000]	113.3% { 137.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 189259	(10.13 , N/A) (N/A , -0.01 , N/A)	476.7	N/A	1.1837 [1.0000]	118.4% { 140.3% }			
13C3_PFBS_EIS	(302.0 / 80.0) 870063	(6.13 , N/A) (N/A , -0.02 , N/A)	782.7	N/A	2.6277 [2.0000]	131.4% { 127.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 462300	(8.04 , N/A) (N/A , -0.01 , N/A)	623.3	N/A	2.4809 [2.0000]	124.0% { 122.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 830279	(9.48 , N/A) (N/A , -0.01 , N/A)	603.8	N/A	2.2791 [2.0000]	114.0% { 139.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 313658	(5.82 , N/A) (N/A , -0.01 , N/A)	937.8	N/A	16.2078 [4.0000]	405.2% { 419.1% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 170199	(7.56 , N/A) (N/A , -0.01 , N/A)	503.5	N/A	7.1930 [4.0000]	179.8% { 168.6% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 141482	(8.99 , N/A) (N/A , -0.01 , N/A)	292.7	N/A	5.9932 [4.0000]	149.8% { 145.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1007515	(10.17 , N/A) (N/A , 0.00 , N/A)	1058.6	N/A	1.8283 [2.0000]	91.4% { 114.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 176512	(10.60 , N/A) (N/A , 0.00 , N/A)	687.5	N/A	1.2479 [2.0000]	62.4% { 75.5% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 175832	(10.69 , N/A) (N/A , 0.00 , N/A)	827.5	N/A	1.4328 [2.0000]	71.6% { 92.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (16)
Acquired: 2022/12/14 - 14:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 560235	(9.52 , N/A) (N/A , -0.01 , N/A)	531.2	N/A	6.4972 [4.0000]	162.4% { 220.7% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 464420	(9.69 , N/A) (N/A , 0.00 , N/A)	574.6	N/A	5.9523 [4.0000]	148.8% { 189.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 434806	(10.56 , N/A) (N/A , 0.00 , N/A)	718.8	N/A	16.0341 [20.0000]	80.2% { 107.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 166198	(10.66 , N/A) (N/A , 0.00 , N/A)	961.4	N/A	12.2313 [20.0000]	61.2% { 76.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 807624	(6.51 , N/A) (N/A , -0.01 , N/A)	672.9	N/A	10.2433 [8.0000]	128.0% { 121.5% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW04-WGN01LF-2212W1

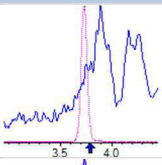
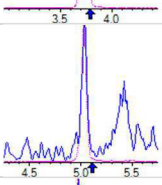
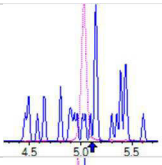
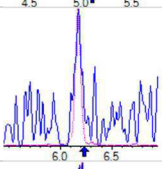
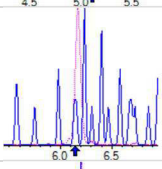
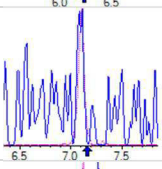
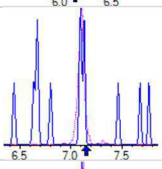
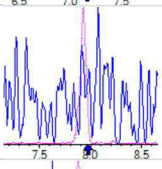
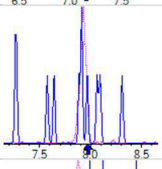
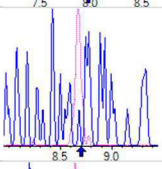
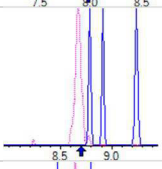
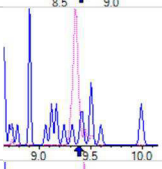
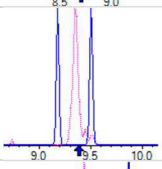
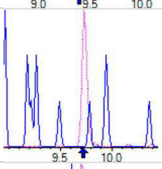
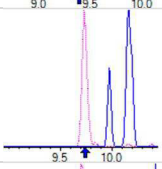
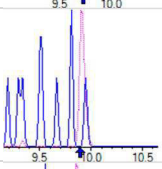
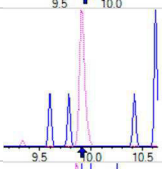
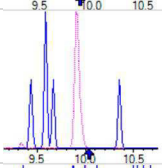
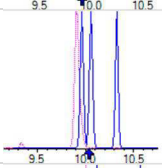
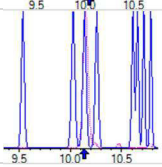
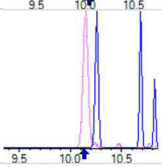
Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0071-03RE1	File ID:	S2022-12-14A (17)
Sampled:	12/07/22 21:45	Prepared:	12/12/22 14:19	Analyzed:	12/14/22 14:44
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	500 g / 2 ml			Instrument:	Saphira
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

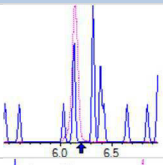
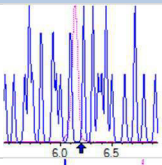
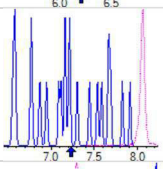
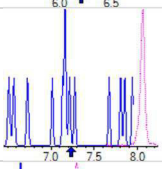
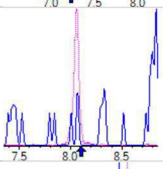
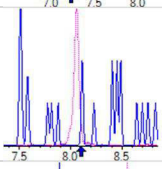
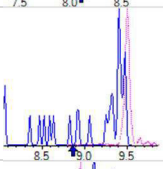
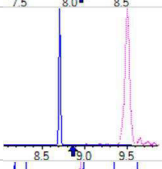
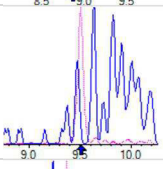
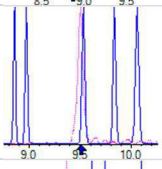
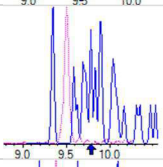
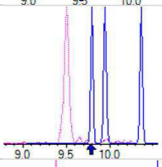
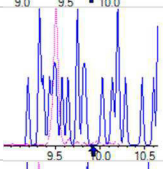
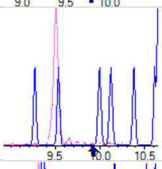
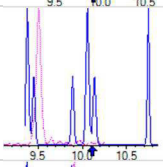
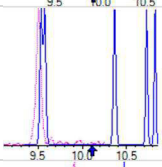
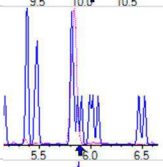
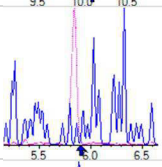
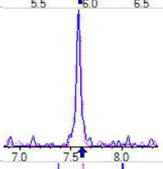
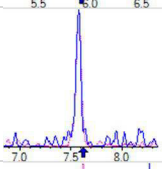
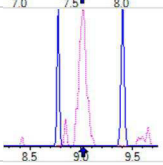
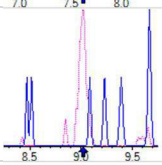
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

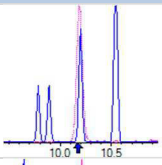
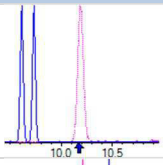
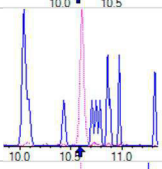
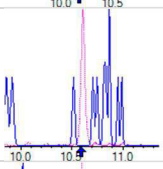
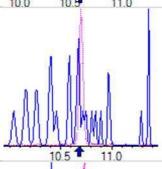
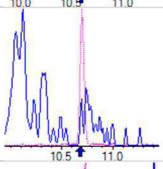
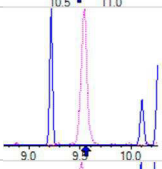
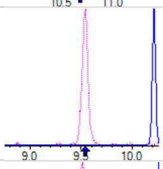
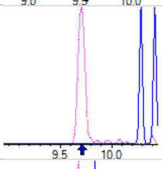
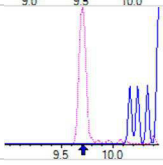
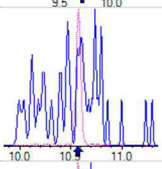
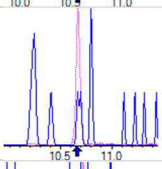
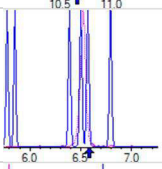
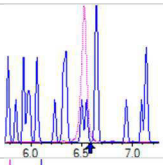
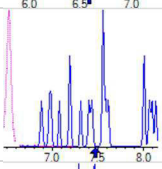
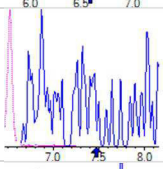
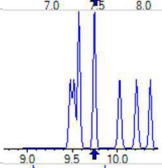
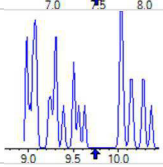
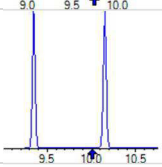
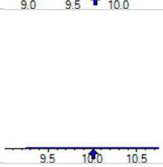
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

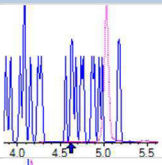
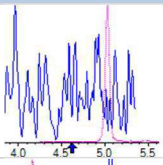
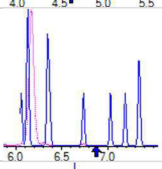
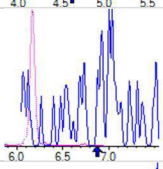
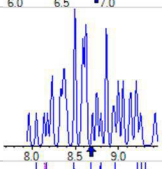
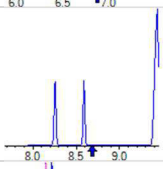
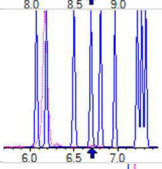
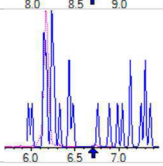
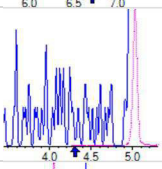
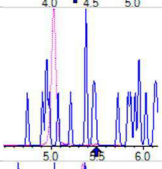
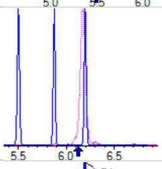
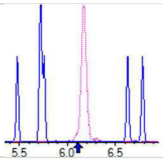
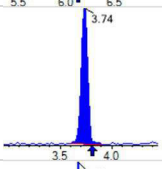
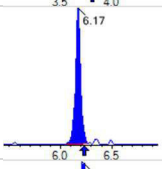
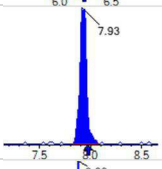
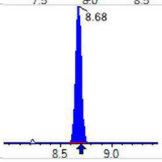
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

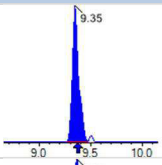
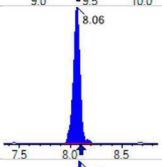
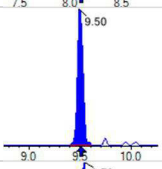
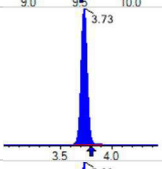
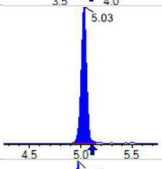
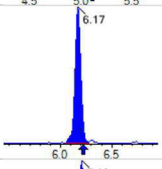
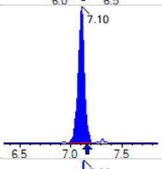
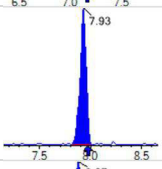
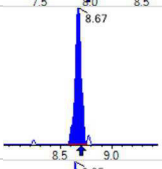
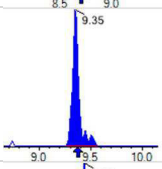
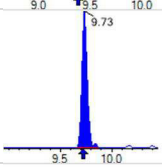
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 8399	(3.74 , N/A) (N/A , 0.02 , N/A)	237.0	N/A	0.6922 [1.0000]	69.2% { 8.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 11725	(6.17 , N/A) (N/A , 0.00 , N/A)	167.0	N/A	0.6425 [1.0000]	64.3% { 6.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 16329	(7.93 , N/A) (N/A , 0.01 , N/A)	180.8	N/A	0.9354 [1.0000]	93.5% { 11.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 15529	(8.68 , N/A) (N/A , 0.01 , N/A)	7474.8	N/A	1.1428 [1.0000]	114.3% { 13.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

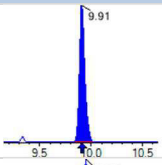
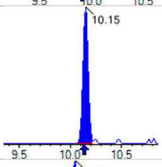
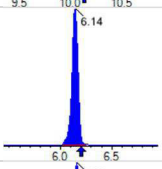
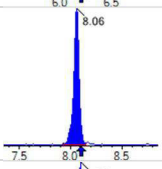
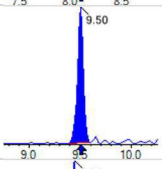
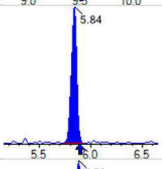
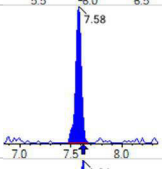
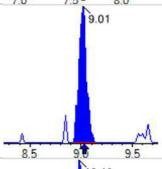
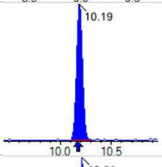
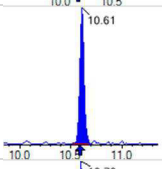
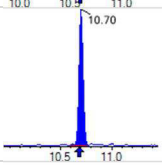
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 11505	(9.35 , N/A) (N/A , 0.00 , N/A)	35131.3	N/A	0.8292 [1.0000]	82.9% { 8.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 28097	(8.06 , N/A) (N/A , 0.00 , N/A)	514.5	N/A	0.8706 [1.0000]	87.1% { 9.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 20398	(9.50 , N/A) (N/A , 0.01 , N/A)	174.3	N/A	0.8100 [1.0000]	81.0% { 8.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 67410	(3.73 , N/A) (N/A , 0.02 , N/A)	768.9	N/A	1.0529 [0.8000]	131.6% { 10.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 41014	(5.03 , N/A) (N/A , 0.00 , N/A)	474.0	N/A	0.6317 [0.4000]	157.9% { 12.6% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 31778	(6.17 , N/A) (N/A , 0.00 , N/A)	358.6	N/A	0.3216 [0.2000]	160.8% { 11.5% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 24715	(7.10 , N/A) (N/A , 0.00 , N/A)	253.8	N/A	0.2881 [0.2000]	144.1% { 10.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 27633	(7.93 , N/A) (N/A , 0.01 , N/A)	304.9	N/A	0.2207 [0.2000]	110.3% { 11.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 11846	(8.67 , N/A) (N/A , 0.01 , N/A)	727.4	N/A	0.0990 [0.1000]	99.0% { 11.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 15131	(9.35 , N/A) (N/A , 0.00 , N/A)	253.5	N/A	0.1371 [0.1000]	137.1% { 12.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 25779	(9.73 , N/A) (N/A , 0.00 , N/A)	332.8	N/A	0.1701 [0.1000]	170.1% { 14.8% }			S2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

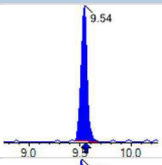
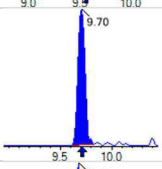
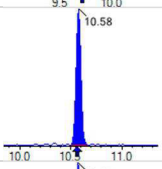
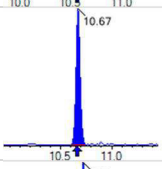
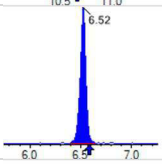
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 25468	(9.91 , N/A) (N/A , 0.01 , N/A)	3968.2	N/A	0.1367 [0.1000]	136.7% { 12.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 13325	(10.15 , N/A) (N/A , 0.01 , N/A)	202.3	N/A	0.1139 [0.1000]	113.9% { 9.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 70311	(6.14 , N/A) (N/A , 0.00 , N/A)	586.9	N/A	0.2175 [0.2000]	108.7% { 10.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 44683	(8.06 , N/A) (N/A , 0.00 , N/A)	516.4	N/A	0.2456 [0.2000]	122.8% { 11.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 63321	(9.50 , N/A) (N/A , 0.01 , N/A)	118.1	N/A	0.2493 [0.2000]	124.7% { 10.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 11896	(5.84 , N/A) (N/A , 0.00 , N/A)	188.6	N/A	0.6296 [0.4000]	157.4% { 15.9% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 11563	(7.58 , N/A) (N/A , 0.00 , N/A)	114.1	N/A	0.5005 [0.4000]	125.1% { 11.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 10333	(9.01 , N/A) (N/A , 0.01 , N/A)	74.0	N/A	0.4483 [0.4000]	112.1% { 10.7% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 102034	(10.19 , N/A) (N/A , 0.02 , N/A)	306.3	N/A	0.2656 [0.2000]	132.8% { 11.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 21504	(10.61 , N/A) (N/A , 0.01 , N/A)	246.4	N/A	0.2181 [0.2000]	109.0% { 9.2% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 18401	(10.70 , N/A) (N/A , 0.01 , N/A)	333.9	N/A	0.2151 [0.2000]	107.5% { 9.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0071-03RE1@10
DF , IV: 1 , 1.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (17)
Acquired: 2022/12/14 - 14:44

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 36849	(9.54 , N/A) (N/A , 0.01 , N/A)	227.8	N/A	0.6130 [0.4000]	153.3% { 14.5% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 39488	(9.70 , N/A) (N/A , 0.01 , N/A)	105.4	N/A	0.7260 [0.4000]	181.5% { 16.1% }			S2,
D7_NMeFOSE_EIS	(623.2 / 58.9) 41574	(10.58 , N/A) (N/A , 0.01 , N/A)	358.3	N/A	2.1992 [2.0000]	110.0% { 10.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 18076	(10.67 , N/A) (N/A , 0.01 , N/A)	300.0	N/A	1.9082 [2.0000]	95.4% { 8.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 76202	(6.52 , N/A) (N/A , 0.00 , N/A)	444.5	N/A	1.2590 [0.8000]	157.4% { 11.5% }			S2,

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0071
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW06-WGN01B-2212W1 (22L0071-01) ug/L	Lab File ID: S2022-12-14A (12)			Analyzed: 12/14/22 13:41
13C4-PFBA	0.0320	131	20 - 150	
13C5-PFPEA	0.0160	131	20 - 150	
13C5-PFHXA	0.00800	130	20 - 150	
13C4-PFHPA	0.00800	120	20 - 150	
13C8-PFOA	0.00800	143	20 - 150	
13C9-PFNA	0.00400	117	20 - 150	
13C6-PFDA	0.00400	140	20 - 150	
13C7-PFUnA	0.00400	141	20 - 150	
13C2-PFDOA	0.00400	98.3	20 - 150	
13C2-PFTEDA	0.00400	114	20 - 150	
13C3-PFBS	0.00800	146	20 - 150	
13C3-PFHXS	0.00800	136	20 - 150	
13C8-PFOS	0.00800	102	20 - 150	
13C2-4:2FTS	0.0160	217	20 - 150	*
13C2-6:2FTS	0.0160	169	20 - 150	*
13C2-8:2FTS	0.0160	252	20 - 150	*
13C8-PFOSA	0.00800	86.9	20 - 150	
D5-NETFOSA	0.00800	64.4	20 - 150	
D3-NMEFOSA	0.00800	60.3	20 - 150	
D3-NMEFOSAA	0.0160	109	20 - 150	
D5-NETFOSAA	0.0160	74.6	20 - 150	
D7-NMEFOSE	0.0800	75.6	20 - 150	
D9-NETFOSE	0.0800	80.1	20 - 150	
13C3-HFPO-DA	0.0320	123	20 - 150	
AF-RHMW06-WGN01B-2212W1 (22L0071-01RE1) ug/L	Lab File ID: S2022-12-14A (13)			Analyzed: 12/14/22 13:53
13C2-4:2FTS	0.0160	146	20 - 150	
13C2-6:2FTS	0.0160	133	20 - 150	
13C2-8:2FTS	0.0160	164	20 - 150	*

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0071
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW06-WQEB01-2212W1 (22L0071-02) ug/L	Lab File ID: S2022-12-14A (14)			Analyzed: 12/14/22 14:06
13C4-PFBA	0.0320	128	20 - 150	
13C5-PFPEA	0.0160	109	20 - 150	
13C5-PFHXA	0.00800	137	20 - 150	
13C4-PFHPA	0.00800	114	20 - 150	
13C8-PFOA	0.00800	118	20 - 150	
13C9-PFNA	0.00400	121	20 - 150	
13C6-PFDA	0.00400	141	20 - 150	
13C7-PFUnA	0.00400	162	20 - 150	*
13C2-PFDOA	0.00400	129	20 - 150	
13C2-PFTEDA	0.00400	144	20 - 150	
13C3-PFBS	0.00800	125	20 - 150	
13C3-PFHXS	0.00800	137	20 - 150	
13C8-PFOS	0.00800	124	20 - 150	
13C2-4:2FTS	0.0160	141	20 - 150	
13C2-6:2FTS	0.0160	143	20 - 150	
13C2-8:2FTS	0.0160	128	20 - 150	
13C8-PFOSA	0.00800	106	20 - 150	
D5-NETFOSA	0.00800	56.3	20 - 150	
D3-NMEFOSA	0.00800	56.5	20 - 150	
D3-NMEFOSAA	0.0160	114	20 - 150	
D5-NETFOSAA	0.0160	126	20 - 150	
D7-NMEFOSE	0.0800	90.7	20 - 150	
D9-NETFOSE	0.0800	97.1	20 - 150	
13C3-HFPO-DA	0.0320	117	20 - 150	
AF-RHMW06-WQEB01-2212W1 (22L0071-02RE1) ug/L	Lab File ID: S2022-12-14A (15)			Analyzed: 12/14/22 14:19
13C7-PFUnA	0.00400	114	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0071
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW04-WGN01LF-2212W1 (22L0071-03) ug/L	Lab File ID: S2022-12-14A (16)			Analyzed: 12/14/22 14:32
13C4-PFBA	0.0320	127	20 - 150	
13C5-PFPEA	0.0160	141	20 - 150	
13C5-PFHXA	0.00800	141	20 - 150	
13C4-PFHPA	0.00800	135	20 - 150	
13C8-PFOA	0.00800	130	20 - 150	
13C9-PFNA	0.00400	127	20 - 150	
13C6-PFDA	0.00400	110	20 - 150	
13C7-PFUnA	0.00400	98.8	20 - 150	
13C2-PFDOA	0.00400	113	20 - 150	
13C2-PFTEDA	0.00400	118	20 - 150	
13C3-PFBS	0.00800	131	20 - 150	
13C3-PFHXS	0.00800	124	20 - 150	
13C8-PFOS	0.00800	114	20 - 150	
13C2-4:2FTS	0.0160	405	20 - 150	*
13C2-6:2FTS	0.0160	180	20 - 150	*
13C2-8:2FTS	0.0160	150	20 - 150	
13C8-PFOSA	0.00800	91.4	20 - 150	
D5-NETFOSA	0.00800	71.6	20 - 150	
D3-NMEFOSA	0.00800	62.4	20 - 150	
D3-NMEFOSAA	0.0160	162	20 - 150	*
D5-NETFOSAA	0.0160	149	20 - 150	
D7-NMEFOSE	0.0800	80.2	20 - 150	
D9-NETFOSE	0.0800	61.2	20 - 150	
13C3-HFPO-DA	0.0320	128	20 - 150	
AF-RHMW04-WGN01LF-2212W1 (22L0071-03RE1) ug/L	Lab File ID: S2022-12-14A (17)			Analyzed: 12/14/22 14:44
13C2-4:2FTS	0.0160	157	20 - 150	*
13C2-6:2FTS	0.0160	125	20 - 150	
D3-NMEFOSAA	0.0160	153	20 - 150	*

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0071
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BBL0205-BLK1) ug/L	Lab File ID: S2022-12-14A (5)			Analyzed: 12/14/22 12:12
13C4-PFBA	0.0320	132	20 - 150	
13C5-PFPEA	0.0160	125	20 - 150	
13C5-PFHXA	0.00800	126	20 - 150	
13C4-PFHPA	0.00800	120	20 - 150	
13C8-PFOA	0.00800	117	20 - 150	
13C9-PFNA	0.00400	118	20 - 150	
13C6-PFDA	0.00400	152	20 - 150	*
13C7-PFUnA	0.00400	145	20 - 150	
13C2-PFDOA	0.00400	133	20 - 150	
13C2-PFTEDA	0.00400	142	20 - 150	
13C3-PFBS	0.00800	125	20 - 150	
13C3-PFHXS	0.00800	128	20 - 150	
13C8-PFOS	0.00800	99.6	20 - 150	
13C2-4:2FTS	0.0160	126	20 - 150	
13C2-6:2FTS	0.0160	114	20 - 150	
13C2-8:2FTS	0.0160	123	20 - 150	
13C8-PFOSA	0.00800	92.4	20 - 150	
D5-NETFOSA	0.00800	46.3	20 - 150	
D3-NMEFOSA	0.00800	45.4	20 - 150	
D3-NMEFOSAA	0.0160	90.5	20 - 150	
D5-NETFOSAA	0.0160	101	20 - 150	
D7-NMEFOSE	0.0800	61.7	20 - 150	
D9-NETFOSE	0.0800	60.9	20 - 150	
13C3-HFPO-DA	0.0320	115	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0071
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BBL0205-BS1) ug/L	Lab File ID: S2022-12-14A (6)			Analyzed: 12/14/22 12:25
13C4-PFBA	0.0320	122	20 - 150	
13C5-PFPEA	0.0160	134	20 - 150	
13C5-PFHXA	0.00800	141	20 - 150	
13C4-PFHPA	0.00800	133	20 - 150	
13C8-PFOA	0.00800	135	20 - 150	
13C9-PFNA	0.00400	118	20 - 150	
13C6-PFDA	0.00400	144	20 - 150	
13C7-PFUnA	0.00400	180	20 - 150	*
13C2-PFDOA	0.00400	159	20 - 150	*
13C2-PFTEDA	0.00400	137	20 - 150	
13C3-PFBS	0.00800	126	20 - 150	
13C3-PFHXS	0.00800	132	20 - 150	
13C8-PFOS	0.00800	108	20 - 150	
13C2-4:2FTS	0.0160	128	20 - 150	
13C2-6:2FTS	0.0160	120	20 - 150	
13C2-8:2FTS	0.0160	132	20 - 150	
13C8-PFOSA	0.00800	102	20 - 150	
D5-NETFOSA	0.00800	55.6	20 - 150	
D3-NMEFOSA	0.00800	54.7	20 - 150	
D3-NMEFOSAA	0.0160	107	20 - 150	
D5-NETFOSAA	0.0160	111	20 - 150	
D7-NMEFOSE	0.0800	77.6	20 - 150	
D9-NETFOSE	0.0800	80.9	20 - 150	
13C3-HFPO-DA	0.0320	141	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0071
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BBL0205-MRL1) ug/L	Lab File ID: S2022-12-14A (7)			Analyzed: 12/14/22 12:37
13C4-PFBA	0.0320	119	20 - 150	
13C5-PFPEA	0.0160	106	20 - 150	
13C5-PFHXA	0.00800	116	20 - 150	
13C4-PFHPA	0.00800	121	20 - 150	
13C8-PFOA	0.00800	132	20 - 150	
13C9-PFNA	0.00400	127	20 - 150	
13C6-PFDA	0.00400	117	20 - 150	
13C7-PFUnA	0.00400	146	20 - 150	
13C2-PFDOA	0.00400	137	20 - 150	
13C2-PFTEDA	0.00400	114	20 - 150	
13C3-PFBS	0.00800	119	20 - 150	
13C3-PFHXS	0.00800	124	20 - 150	
13C8-PFOS	0.00800	114	20 - 150	
13C2-4:2FTS	0.0160	119	20 - 150	
13C2-6:2FTS	0.0160	118	20 - 150	
13C2-8:2FTS	0.0160	108	20 - 150	
13C8-PFOSA	0.00800	100	20 - 150	
D5-NETFOSA	0.00800	52.4	20 - 150	
D3-NMEFOSA	0.00800	53.3	20 - 150	
D3-NMEFOSAA	0.0160	110	20 - 150	
D5-NETFOSAA	0.0160	122	20 - 150	
D7-NMEFOSE	0.0800	73.1	20 - 150	
D9-NETFOSE	0.0800	75.9	20 - 150	
13C3-HFPO-DA	0.0320	115	20 - 150	

METHOD BLANK SUMMARY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Blank ID:	BBL0205-BLK1	Batch:	BBL0205
Prepared:	12/09/2022 14:19		

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BBL0205-BS1	S2022-12-14A (6)	12:25
MRL Check	BBL0205-MRL1	S2022-12-14A (7)	12:37
AF-RHMW06-WGN01B-2212W1	22L0071-01	S2022-12-14A (12)	13:41
DF 10	22L0071-01RE1	S2022-12-14A (13)	13:53
AF-RHMW06-WQEB01-2212W1	22L0071-02	S2022-12-14A (14)	14:06
DF 10	22L0071-02RE1	S2022-12-14A (15)	14:19
AF-RHMW04-WGN01LF-2212W1	22L0071-03	S2022-12-14A (16)	14:32
DF 10	22L0071-03RE1	S2022-12-14A (17)	14:44

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-BLK1	File ID:	S2022-12-14A (5)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:12
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
PFBA	0.00080 U	0.0016	0.00080	0.00021	U
PFPEA	0.00040 U	0.00080	0.00040	0.000065	U
PFHXA	0.00020 U	0.00040	0.00020	0.000055	U
PFHPA	0.00020 U	0.00040	0.00020	0.000041	U
PFOA	0.00020 U	0.00040	0.00020	0.00015	U
PFNA	0.00020 U	0.00040	0.00020	0.000082	U
PFDA	0.00020 U	0.00040	0.00020	0.00010	U
PFUnA	0.00020 U	0.00040	0.00020	0.00016	U
PFDOA	0.00020 U	0.00040	0.00020	0.00011	U
PFTRDA	0.00030 U	0.00040	0.00030	0.00020	U
PFTEDA	0.00020 U	0.00040	0.00020	0.00020	U
PFBS	0.00020 U	0.00040	0.00020	0.000037	U
PFPES	0.00020 U	0.00040	0.00020	0.000063	U
PFHXS	0.00020 U	0.00040	0.00020	0.000032	U
PFHPS	0.00020 U	0.00040	0.00020	0.000051	U
PFOS	0.0000893 J	0.00040	0.00020	0.000064	IR2, J
PFNS	0.00020 U	0.00040	0.00020	0.00012	U
PFDS	0.00020 U	0.00040	0.00020	0.00015	U
PFDOS	0.00020 U	0.00040	0.00020	0.00012	U
4:2FTS	0.00080 U	0.0016	0.00080	0.00029	U
6:2FTS	0.00080 U	0.0016	0.00080	0.00031	U
8:2FTS	0.00080 U	0.0016	0.00080	0.000082	U
PFOSA	0.00020 U	0.00040	0.00020	0.00010	U
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047	U
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041	U
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011	U
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011	U
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010	U
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010	U
HFPO-DA	0.00040 U	[illegible]	[illegible]	[illegible]	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-BLK1	File ID:	S2022-12-14A (5)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:12
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
ADONA	0.00040 U	0.00080	0.00040	0.00012	U
PFEESA	0.00040 U	0.00080	0.00040	0.00011	U
PFMPA	0.00040 U	0.00080	0.00040	0.000054	U
PFMBA	0.00040 U	0.00080	0.00040	0.000091	U
NFDHA	0.00040 U	0.00080	0.00040	0.00030	U
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021	U
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021	U
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057	U
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044	U
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055	U

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Preparation:	1633
Batch:	BBL0205	Laboratory ID:	BBL0205-BS1
Column:			

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
PFBA	0.0160	0.0174	109	40 - 150
PFPEA	0.00800	0.00875	109	40 - 150
PFHXA	0.00400	0.00439	110	40 - 150
PFHPA	0.00400	0.00463	116	40 - 150
PFOA	0.00400	0.00419	105	40 - 150
PFNA	0.00400	0.00499	125	40 - 150
PFDA	0.00400	0.00414	103	40 - 150
PFUnA	0.00400	0.00407	102	40 - 150
PFDOA	0.00400	0.00394	98.5	40 - 150
PFTRDA	0.00400	0.00374	93.5	40 - 150
PFTEDA	0.00400	0.00430	108	40 - 150
PFBS	0.00354	0.00412	116	40 - 150
PFPES	0.00376	0.00433	115	40 - 150
PFHXS	0.00366	0.00394	108	40 - 150
PFHPS	0.00382	0.00389	102	40 - 150
PFOS	0.00372	0.00421	113	40 - 150
PFNS	0.00384	0.00470	122	40 - 150
PFDS	0.00386	0.00395	102	40 - 150
PFDOS	0.00388	0.00398	103	40 - 150
4:2FTS	0.0150	0.0169	113	40 - 150
6:2FTS	0.0152	0.0180	118	40 - 150
8:2FTS	0.0154	0.0186	121	40 - 150
PFOSA	0.00400	0.00495	124	40 - 150
NMeFOSA	0.0160	0.0193	121	40 - 150
NEtFOSA	0.0160	0.0175	109	40 - 150
NMeFOSAA	0.00400	0.00443	111	40 - 150
NEtFOSAA	0.00400	0.00476	119	40 - 150
NMeFOSE	0.0160	0.0181	113	40 - 150
NEtFOSE	0.0160	0.0168	105	40 - 150
HFPO-DA	0.00800	0.00791	98.8	40 - 150
ADONA	0.00756	0.00806	107	40 - 150
PFEESA	0.00712	0.00745	105	40 - 150
PFMPA	0.00800	0.00855	107	40 - 150
PFMBA	0.00800	0.00848	106	40 - 150

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Preparation:	1633
Batch:	BBL0205	Laboratory ID:	BBL0205-BS1
Column:			

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
NFDHA	0.00800	0.00868	108	40 - 150
9CL-PF3ONS	0.00748	0.00833	111	40 - 150
11CL-PF3OUDS	0.00756	0.00861	114	40 - 150
3:3FTCA	0.0160	0.0175	109	40 - 150
5:3FTCA	0.0160	0.0183	114	40 - 150
7:3FTCA	0.0160	0.0163	102	40 - 150

CALIBRATION SUMMARY

Chemist:DAG
Instrument:Saphira
Type:Sciex Q5500

Quant Method:163

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(212.9 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.35123 x (std. dev. = 0.01656) (weighting: None)	%RSE=4.7
PFPeA	(262.9 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.44382 x (std. dev. = 0.01874) (weighting: None)	%RSE=4.2
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.44310 x (std. dev. = 0.03853) (weighting: None)	%RSE=8.7
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.46275 x (std. dev. = 0.02306) (weighting: None)	%RSE=5.0
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.49965 x (std. dev. = 0.04947) (weighting: None)	%RSE=9.9
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.91166 x (std. dev. = 0.06699) (weighting: None)	%RSE=7.3
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 1.01114 x (std. dev. = 0.12432) (weighting: None)	%RSE=12.3
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.86749 x (std. dev. = 0.03616) (weighting: None)	%RSE=4.2
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.86599 x (std. dev. = 0.12682) (weighting: None)	%RSE=14.6
PFTrDA	(663.0 / 619.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.71396 x (std. dev. = 0.08230) (weighting: None)	%RSE=11.5
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.91387 x (std. dev. = 0.08684) (weighting: None)	%RSE=9.5
PFBS	(298.9 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.24995 x (std. dev. = 0.01576) (weighting: None)	%RSE=6.3
PFPeS	(349.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.82555 x (std. dev. = 0.07274) (weighting: None)	%RSE=8.8
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.73156 x (std. dev. = 0.07037) (weighting: None)	%RSE=9.6
PFHpS	(449.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9514	y = 0.43043 x (std. dev. = 0.01521) (weighting: None)	%RSE=3.5
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.50994 x (std. dev. = 0.04509) (weighting: None)	%RSE=8.8
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.65025 x (std. dev. = 0.04019) (weighting: None)	%RSE=6.2
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.85771 x (std. dev. = 0.06851) (weighting: None)	%RSE=8.0
PFDoS	(698.9 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.43679 x (std. dev. = 0.02806) (weighting: None)	%RSE=6.4
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 3.04722 x (std. dev. = 0.18703) (weighting: None)	%RSE=6.1
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.54689 x (std. dev. = 0.15681) (weighting: None)	%RSE=10.1
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.36477 x (std. dev. = 0.17884) (weighting: None)	%RSE=13.1
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.49045 x (std. dev. = 0.04843) (weighting: None)	%RSE=9.9
NMeFOSA	(511.9 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.66390 x (std. dev. = 0.18882) (weighting: None)	%RSE=11.3
NEtFOSA	(526.0 / 219.0)	D5_NEtFOSA_EIS	4.0000	1.0000	y = 1.84874 x (std. dev. = 0.11891) (weighting: None)	%RSE=6.4
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.19326 x (std. dev. = 0.02299) (weighting: None)	%RSE=11.9
NEtFOSAA	(584.0 / 419.0)	D5_EtFOSAA_EIS	1.0000	1.0000	y = 0.21763 x (std. dev. = 0.01767) (weighting: None)	%RSE=8.1
NMeFOSE	(616.1 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.26983 x (std. dev. = 0.03217) (weighting: None)	%RSE=11.9
NEtFOSE	(630.0 / 59.0)	D9_NEtFOSE_EIS	4.0000	1.0000	y = 0.13531 x (std. dev. = 0.01001) (weighting: None)	%RSE=7.4
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.15460 x (std. dev. = 0.01149) (weighting: None)	%RSE=7.4
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.62152 x (std. dev. = 0.07199) (weighting: None)	%RSE=11.6
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 1.74461 x (std. dev. = 0.24485) (weighting: None)	%RSE=14.0
11Cl-PF3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.12997 x (std. dev. = 0.08948) (weighting: None)	%RSE=7.9
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.03730 x (std. dev. = 0.00171) (weighting: None)	%RSE=4.6
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.35465 x (std. dev. = 0.04429) (weighting: None)	%RSE=12.5
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.44373 x (std. dev. = 0.03580) (weighting: None)	%RSE=8.1
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.86126 x (std. dev. = 0.07986) (weighting: None)	%RSE=9.3
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.12048 x (std. dev. = 0.00716) (weighting: None)	%RSE=5.9
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.40320 x (std. dev. = 0.02095) (weighting: None)	%RSE=5.2
NFDHA	(201.0 / 85.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.01797 x + 0.00111 (r = 0.99690) (weighting: 1 / x)	%RSE=12.9
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 121332.9140 x	%RSD=8.3
13C2_PFHxA_IIS	(315.1 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 182484.4821 x	%RSD=5.9
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 174565.7992 x	%RSD=4.7
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 135886.7394 x	%RSD=5.9
13C2_PFDA_IIS	(515.1 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 138756.1877 x	%RSD=4.9
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 322739.0551 x	%RSD=6.5
13C4_PFOS_IIS	(502.8 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 251821.1425 x	%RSD=7.6

Chemist:DAG
Instrument:Saphira
Type:Sciex Q5500

Quant Method:163

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBA_EIS	(217.0 / 172.0)	13C3_PFBA_IIS	8.0000	1.0000	y = 6.0981 x	%RSD=4.4
13C5_PFPeA_EIS	(267.9 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 2.2151 x	%RSD=5.5
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 1.6855 x	%RSD=8.9
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 1.4632 x	%RSD=4.8
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 1.5336 x	%RSD=6.2
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 0.7704 x	%RSD=10.9
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 0.9591 x	%RSD=11.7
13C7_PFUnA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3172 x	%RSD=11.5
13C2_PFDoA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.6198 x	%RSD=6.9
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0171 x	%RSD=7.3
13C3_PFBS_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.3012 x	%RSD=7.7
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.2951 x	%RSD=10.0
13C8_PFOS_EIS	(507.0 / 80.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 2.4901 x	%RSD=11.2
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.2690 x	%RSD=10.4
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.3289 x	%RSD=8.3
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.3281 x	%RSD=15.1
13C8_PFOSA_EIS	(506.0 / 78.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 3.7666 x	%RSD=8.2
D3_NMeFOSA_EIS	(515.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.9668 x	%RSD=7.1
D5_NEtFOSA_EIS	(531.1 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.8388 x	%RSD=11.7
D3_MeFOSAA_EIS	(573.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.1788 x	%RSD=6.9
D5_EtFOSAA_EIS	(589.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0666 x	%RSD=13.7
D7_NMeFOSE_EIS	(623.2 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 1.8535 x	%RSD=10.3
D9_NEtFOSE_EIS	(639.2 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 0.9288 x	%RSD=14.1
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 4.1298 x	%RSD=7.9

x=Concentration Analyte

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

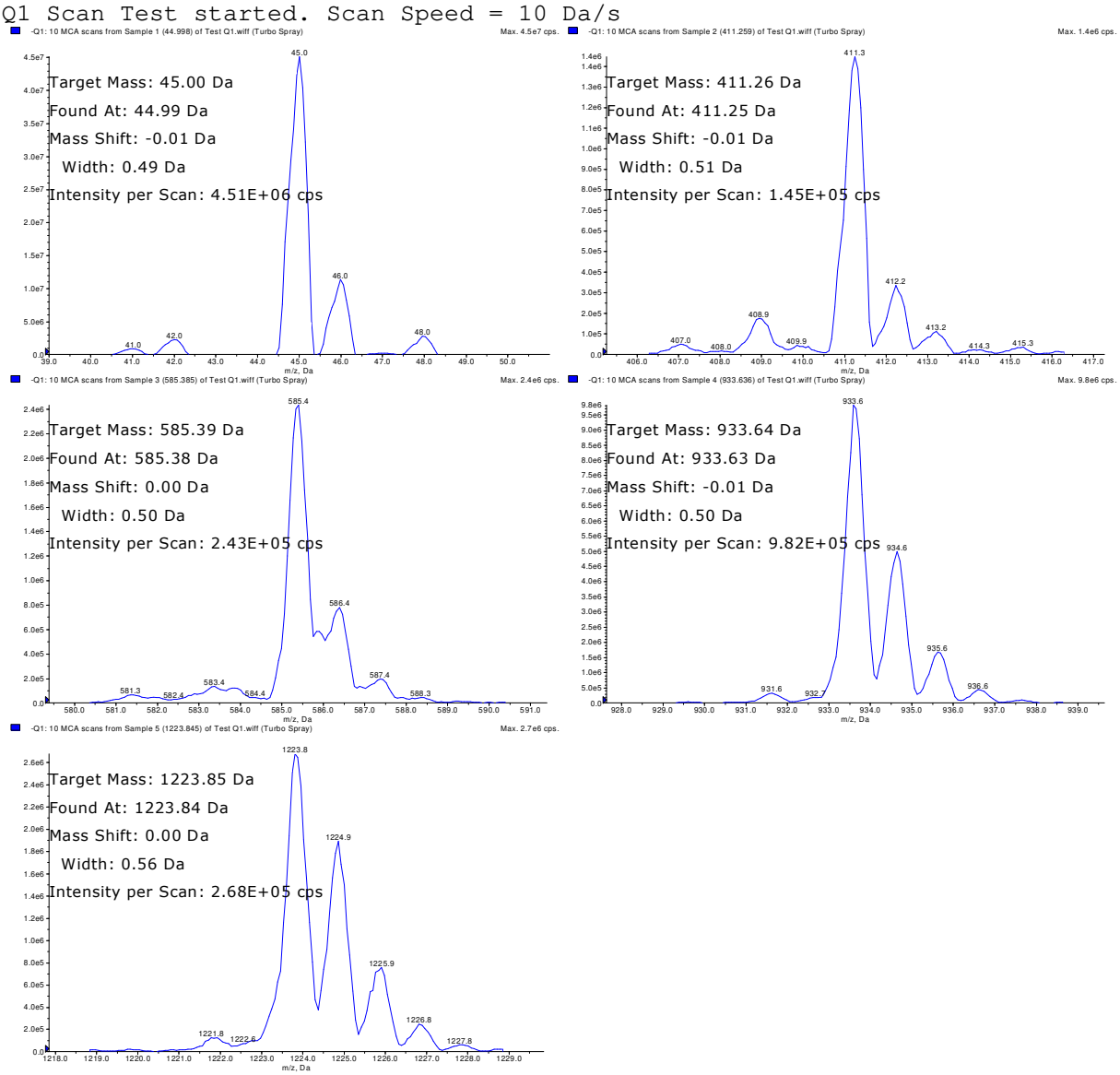
$$\text{Acid Factor} = \frac{\text{Moleculat weight Acid}}{\text{Molecular weight Salt}}$$

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

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

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

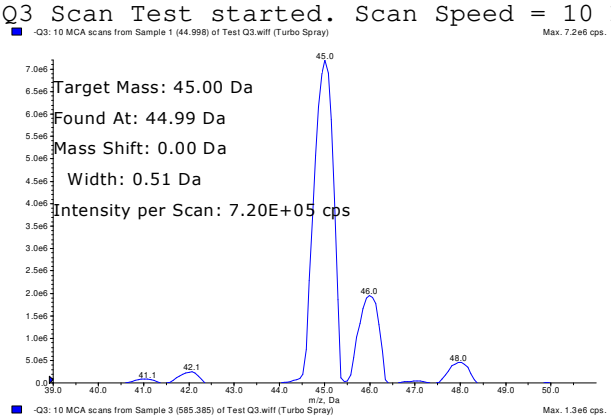
Q1 Scan Test started. Scan Speed = 10 Da/s

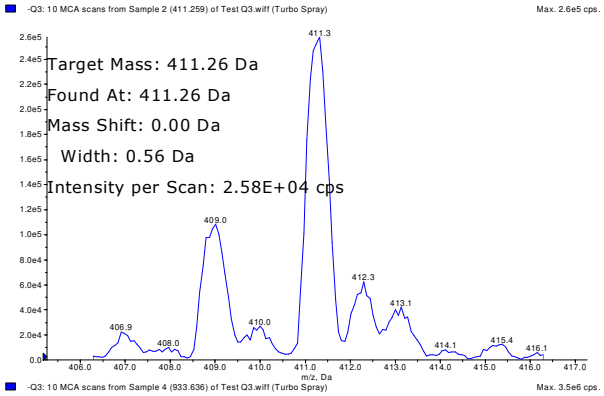


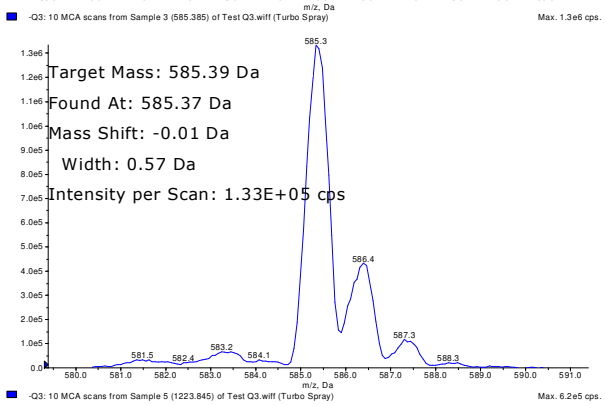
Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	-0.01	0.49	4.51E+06	PASS
411.26	411.25	-0.01	0.51	1.45E+05	PASS
585.39	585.38	0.00	0.50	2.43E+05	PASS
933.64	933.63	-0.01	0.50	9.82E+05	PASS
1223.85	1223.84	0.00	0.56	2.68E+05	PASS

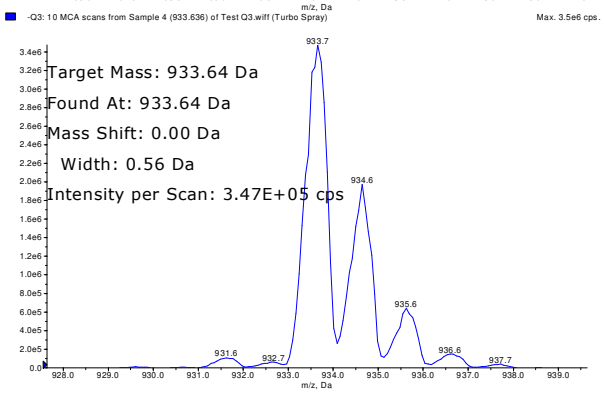
Tune 2021-11-23 Q3 NEG @ 10Da/s

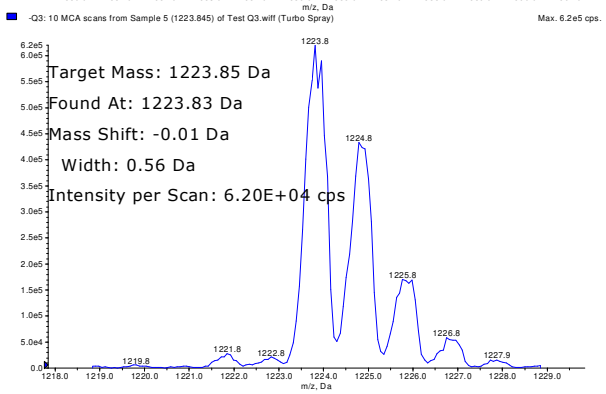
Q3 Scan Test started. Scan Speed = 10 Da/s











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

EPA 1633

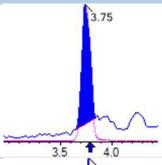
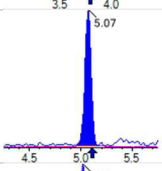
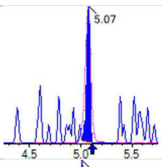
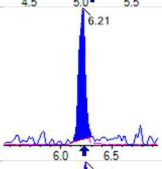
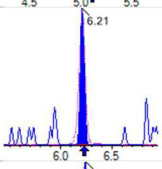
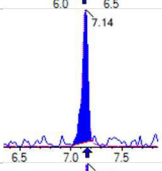
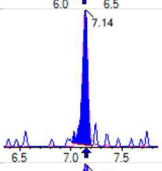
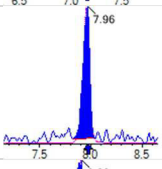
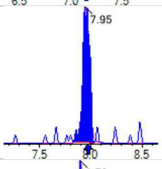
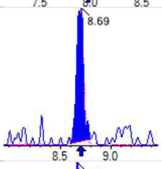
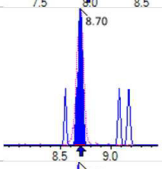
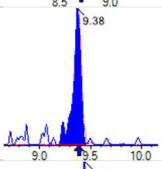
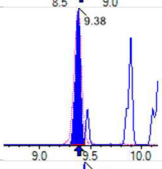
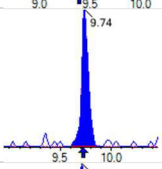
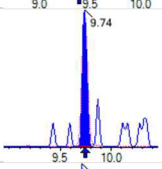
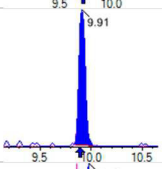
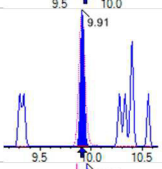
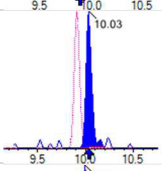
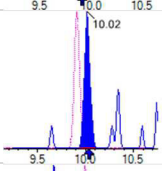
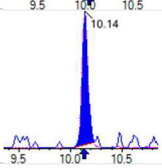
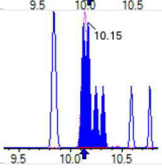
Initial Calibration: SB03823

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 25183	(3.75 , 1.00) (0.00 , N/A , 0.0)	41.1	N/A 0.0 0.0	0.3677 [0.4000]	91.9%			
PFPeA	(262.9 / 219.0) 18029 (262.9 / 69.0) 230	(5.07 , 1.00) (0.00 , N/A , -0.2)	124.6 17.2	0.0128 101.7 101.7	0.1906 [0.2000]	95.3%			
PFHxA	(313.0 / 269.0) 12152 (313.0 / 119.0) 1158	(6.21 , 1.00) (0.00 , N/A , -0.1)	52.8 35.7	0.0953 102.9 102.9	0.0983 [0.1000]	98.3%			
PFHpA	(363.0 / 319.0) 12762 (363.0 / 169.0) 4000	(7.14 , 1.00) (0.00 , N/A , 0.1)	61.2 45.0	0.3134 100.7 100.7	0.1041 [0.1000]	104.1%			
PFOA	(413.0 / 369.0) 14795 (413.0 / 169.0) 4480	(7.96 , 1.00) (0.00 , N/A , 0.2)	52.3 54.5	0.3028 90.2 90.2	0.1177 [0.1000]	117.7%			
PFNA	(463.0 / 419.0) 8653 (463.0 / 169.0) 813	(8.69 , 1.00) (0.00 , N/A , -0.2)	26.6 15.3	0.0939 53.5 53.5	0.1003 [0.1000]	100.3%			
PFDA	(513.0 / 469.0) 13877 (513.0 / 169.0) 1718	(9.38 , 1.00) (0.00 , N/A , -0.2)	42.4 44.0	0.1238 123.0 123.0	0.1086 [0.1000]	108.6%			
PFUnA	(563.0 / 519.0) 16947 (563.0 / 169.0) 2361	(9.74 , 1.00) (0.00 , N/A , 0.1)	64.0 23.5	0.1393 152.2 152.2	0.0980 [0.1000]	98.0%			IR2,
PFDoA	(613.0 / 569.0) 26307 (613.0 / 169.0) 847	(9.91 , 1.00) (0.00 , N/A , -0.2)	108.8 20.6	0.0322 25.1 25.1	0.1247 [0.1000]	124.7%			IR1,
PFTrDA	(663.0 / 619.0) 18722 (663.0 / 169.0) 3175	(10.03 , 1.01) (N/A , 0.00 , 0.9)	82.0 30.4	0.1696 77.2 77.2	0.1077 [0.1000]	107.7%			
PFTeDA	(713.0 / 669.0) 11378 (713.0 / 169.0) 1807	(10.14 , 1.00) (0.00 , N/A , -0.5)	51.6 15.8	0.1588 85.4 85.4	0.0881 [0.1000]	88.1%			

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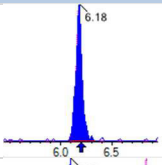
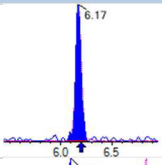
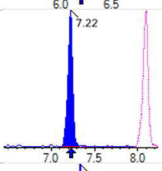
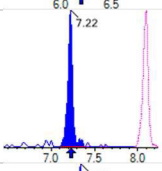
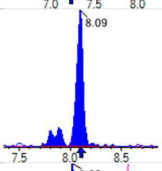
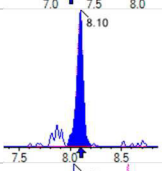
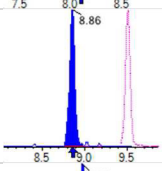
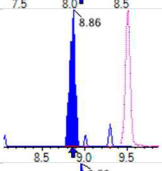
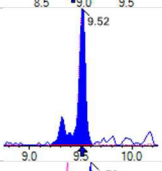
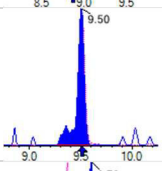
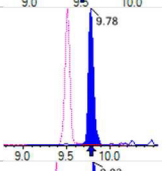
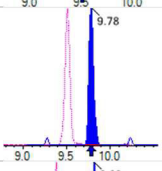
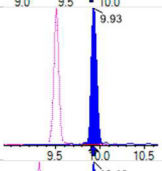
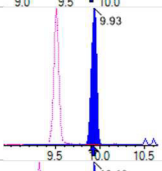
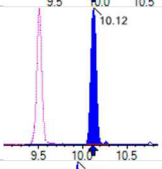
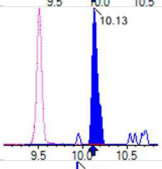
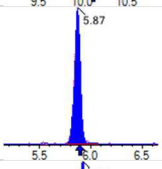
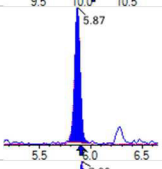
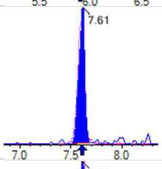
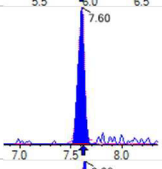
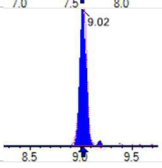
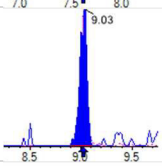
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

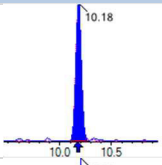
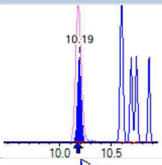
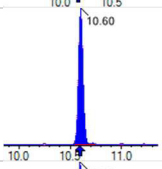
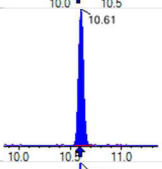
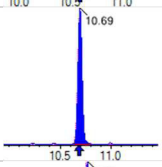
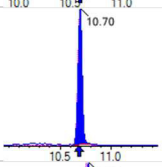
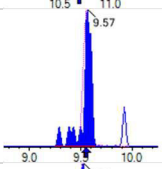
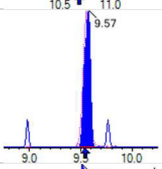
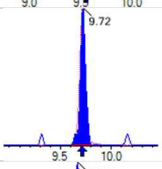
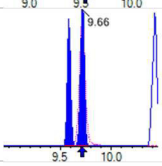
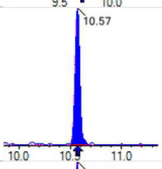
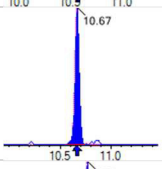
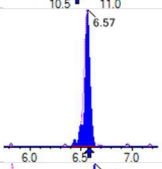
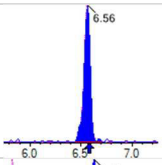
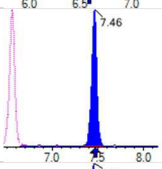
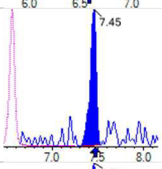
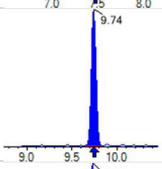
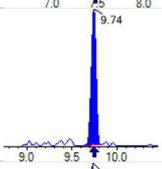
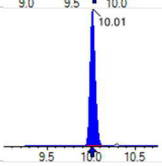
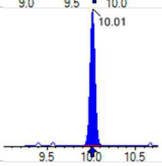
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 17579 (298.9 / 99.0) 14460	(6.18 , 1.00) (0.00 , N/A , 0.4)	194.9 100.3	0.8226 114.2 114.2	0.0859 [0.0885]	97.1%			
PFPeS	(349.0 / 80.0) 36034 (349.0 / 99.0) 12916	(7.22 , 0.89) (N/A , -0.01 , 0.1)	275.1 99.8	0.3584 95.7 95.7	0.1097 [0.0938]	116.9%			
PFHxS	(399.0 / 80.0) 32817 (399.0 / 99.0) 9746	(8.09 , 1.00) (0.00 , N/A , -0.1)	1919.4 144.2	0.2970 92.1 92.1	0.1094 [0.0911]	120.1%			
PFHpS	(449.0 / 80.0) 26025 (449.0 / 99.0) 6379	(8.86 , 0.93) (N/A , -0.01 , -0.2)	224.9 141.2	0.2451 79.8 79.8	0.0925 [0.0951]	97.2%			
PFOS	(499.0 / 80.0) 34591 (499.0 / 99.0) 10202	(9.52 , 1.00) (0.01 , N/A , 0.8)	49.7 49.6	0.2949 128.5 128.5	0.1011 [0.0927]	109.0%			
PFNS	(549.0 / 80.0) 44071 (549.0 / 99.0) 9647	(9.78 , 1.03) (N/A , 0.00 , -0.2)	161.6 487.5	0.2189 84.4 84.4	0.1046 [0.0960]	108.9%			
PFDS	(599.0 / 80.0) 62240 (599.0 / 99.0) 12765	(9.93 , 1.04) (N/A , 0.01 , -0.3)	237.6 630.7	0.2051 91.1 91.1	0.1123 [0.0963]	116.6%			
PFDoS	(698.9 / 80.0) 27460 (698.9 / 99.0) 6869	(10.12 , 1.06) (N/A , 0.01 , -0.7)	1199.3 49.0	0.2502 123.6 123.6	0.0980 [0.0970]	101.0%			
4:2FTS	(327.0 / 307.0) 27490 (327.0 / 81.0) 15432	(5.87 , 1.00) (0.00 , N/A , 0.1)	380.3 119.7	0.5614 92.5 92.5	0.4086 [0.3738]	109.3%			
6:2FTS	(427.0 / 407.0) 17427 (427.0 / 81.0) 10767	(7.61 , 1.00) (0.01 , N/A , 0.5)	123.1 75.7	0.6178 95.1 95.1	0.4356 [0.3796]	114.8%			
8:2FTS	(527.0 / 507.0) 13776 (527.0 / 81.0) 11937	(9.02 , 1.00) (-0.01 , N/A , -0.5)	3683.6 57.8	0.8665 138.2 138.2	0.3782 [0.3833]	98.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

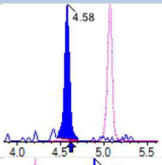
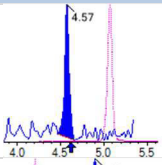
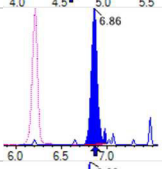
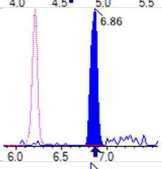
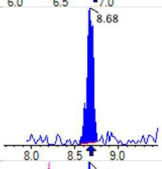
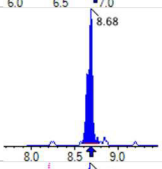
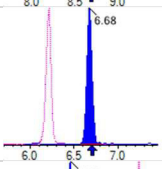
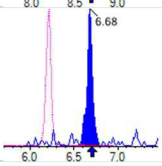
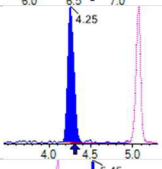
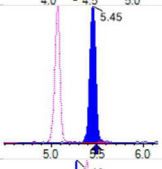
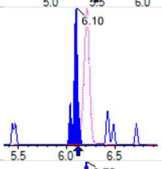
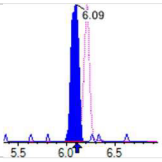
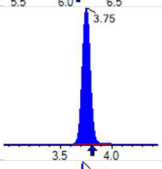
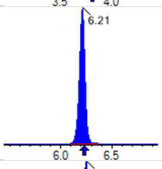
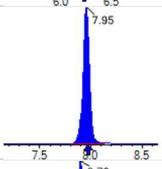
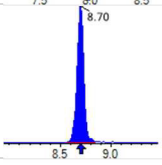
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 44867 (498.0 / 478.0) 301	(10.18 , 1.00) (0.00 , N/A , -0.4)	214.1 12.9	0.0067 29.4 29.4	0.0924 [0.1000]	92.4%			
NMeFOSA	(511.9 / 219.0) 39410 (511.9 / 169.0) 30750	(10.60 , 1.00) (0.00 , N/A , -0.2)	581.2 318.6	0.7803 122.3 122.3	0.4101 [0.4000]	102.5%			
NEtFOSA	(526.0 / 219.0) 46753 (526.0 / 169.0) 48270	(10.69 , 1.00) (0.00 , N/A , -0.1)	531.5 373.7	1.0324 96.7 96.7	0.4561 [0.4000]	114.0%			
NMeFOSAA	(570.0 / 419.0) 4860 (570.0 / 483.0) 2687	(9.57 , 1.00) (0.02 , N/A , 0.4)	151391.4 263.3	0.5529 96.3 96.3	0.0932 [0.1000]	93.2%			
NEtFOSAA	(584.0 / 419.0) 5808 (584.0 / 526.0) 1859	(9.72 , 1.00) (0.01 , N/A , 3.3)	459270.3 103.6	0.3201 56.5 56.5	0.1054 [0.1000]	105.4%			
NMeFOSE	(616.1 / 59.0) 15497	(10.57 , 1.00) (0.01 , N/A , 0.0)	268.1	N/A 0.0 0.0	0.5065 [0.4000]	126.6%			
NEtFOSE	(630.0 / 59.0) 3877	(10.67 , 1.00) (0.00 , N/A , 0.0)	347.9	N/A 0.0 0.0	0.4431 [0.4000]	110.8%			
HFPO-DA	(285.0 / 169.0) 10512 (285.0 / 185.0) 33665	(6.57 , 1.00) (0.01 , N/A , 0.1)	202.6 222.9	3.2026 121.8 121.8	0.1904 [0.2000]	95.2%			
ADONA	(377.0 / 85.0) 55727 (377.0 / 251.0) 6768	(7.46 , 1.14) (N/A , -0.01 , 0.5)	495.5 26.2	0.1214 103.0 103.0	0.2367 [0.1885]	125.5%			
9Cl-Pf3ONS	(531.0 / 351.0) 150836 (533.0 / 353.0) 45137	(9.74 , 1.48) (N/A , 0.01 , -0.1)	318.9 105.2	0.2992 103.2 103.2	0.2259 [0.1867]	121.0%			
11Cl-PF3OUDS	(631.0 / 451.0) 82897 (633.0 / 453.0) 20945	(10.01 , 1.53) (N/A , 0.00 , 0.0)	7339.7 376.4	0.2527 80.1 80.1	0.1937 [0.1886]	102.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

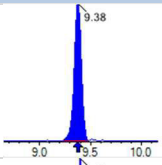
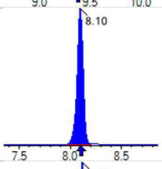
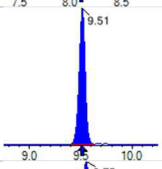
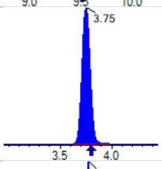
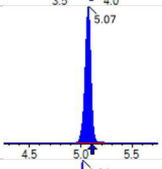
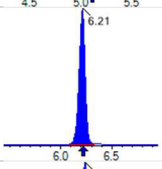
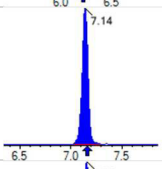
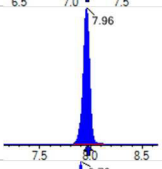
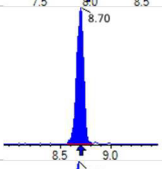
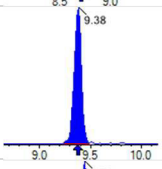
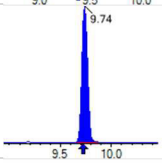
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1526 (241.0 / 117.0) 2205	(4.58 , 0.90) (N/A , -0.04 , 0.2)	70.6 37.3	1.4448 88.1 88.1	0.3839 [0.4000]	96.0%			
5:3FTCA	(341.0 / 236.7) 7391 (341.0 / 217.0) 18515	(6.86 , 1.10) (N/A , -0.01 , 0.1)	90.8 79.3	2.5050 158.9 158.9	0.2988 [0.4000]	74.7%			IR2,
7:3FTCA	(441.0 / 317.0) 14583 (441.0 / 337.0) 10740	(8.68 , 1.40) (N/A , 0.00 , -0.2)	46.6 146.0	0.7365 87.9 87.9	0.4712 [0.4000]	117.8%			
PFEESA	(315.0 / 135.0) 28437 (315.0 / 83.0) 9057	(6.68 , 1.07) (N/A , -0.02 , -0.3)	419.0 55.5	0.3185 103.9 103.9	0.2113 [0.1785]	118.4%			
PFMPA	(229.0 / 85.0) 5012	(4.25 , 0.84) (N/A , -0.05 , 0.0)	186.2	N/A 0.0 0.0	0.1952 [0.2000]	97.6%			
PFMBA	(279.0 / 85.0) 17280	(5.45 , 1.08) (N/A , -0.04 , 0.0)	384.0	N/A 0.0 0.0	0.2011 [0.2000]	100.5%			
NFDHA	(201.0 / 85.0) 863 (295.0 / 201.0) 4745	(6.10 , 0.98) (N/A , -0.02 , 0.7)	59.6 92.8	5.4985 83.5 83.5	0.2203 [0.2000]	110.2%			
13C3_PFBA_IIS	(216.0 / 172.0) 134732	(3.75 , N/A) (N/A , -0.05 , N/A)	641.4	N/A	1.1104 [1.0000]	111.0% { 106.4% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 182961	(6.21 , N/A) (N/A , -0.02 , N/A)	723.3	N/A	1.0026 [1.0000]	100.3% { 93.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 180399	(7.95 , N/A) (N/A , -0.01 , N/A)	410.1	N/A	1.0334 [1.0000]	103.3% { 102.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 140050	(8.70 , N/A) (N/A , -0.01 , N/A)	373.3	N/A	1.0306 [1.0000]	103.1% { 106.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

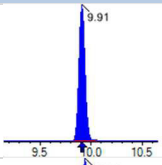
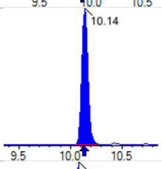
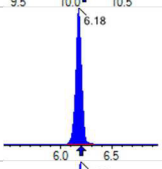
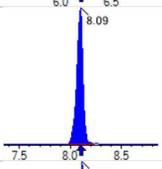
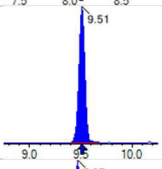
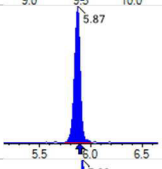
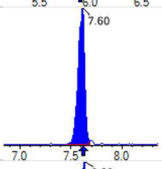
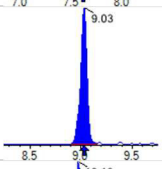
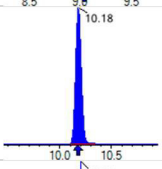
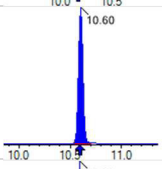
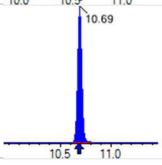
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 139697	(9.38 , N/A) (N/A , 0.00 , N/A)	335.5	N/A	1.0068 [1.0000]	100.7% { 98.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 346170	(8.10 , N/A) (N/A , -0.01 , N/A)	624.9	N/A	1.0726 [1.0000]	107.3% { 103.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 250661	(9.51 , N/A) (N/A , 0.01 , N/A)	441.5	N/A	0.9954 [1.0000]	99.5% { 90.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 780047	(3.75 , N/A) (N/A , -0.05 , N/A)	896.0	N/A	7.5953 [8.0000]	94.9% { 98.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 426306	(5.07 , N/A) (N/A , -0.04 , N/A)	756.0	N/A	4.2075 [4.0000]	105.2% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 278975	(6.21 , N/A) (N/A , -0.02 , N/A)	729.4	N/A	1.8093 [2.0000]	90.5% { 88.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 264919	(7.14 , N/A) (N/A , -0.01 , N/A)	540.4	N/A	1.9792 [2.0000]	99.0% { 91.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 251573	(7.96 , N/A) (N/A , -0.01 , N/A)	747.0	N/A	1.8187 [2.0000]	90.9% { 92.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 94634	(8.70 , N/A) (N/A , -0.01 , N/A)	355.9	N/A	0.8770 [1.0000]	87.7% { 87.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 126355	(9.38 , N/A) (N/A , 0.00 , N/A)	333.7	N/A	0.9431 [1.0000]	94.3% { 103.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 199353	(9.74 , N/A) (N/A , 0.01 , N/A)	539.4	N/A	1.0834 [1.0000]	108.3% { 107.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

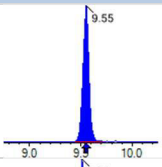
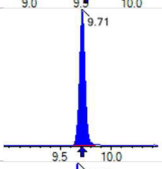
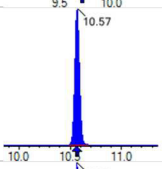
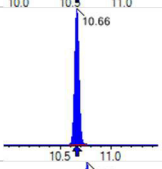
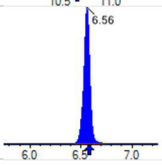
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 243530	(9.91 , N/A) (N/A , 0.01 , N/A)	674.0	N/A	1.0762 [1.0000]	107.6% { 99.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 141363	(10.14 , N/A) (N/A , 0.01 , N/A)	269.4	N/A	0.9949 [1.0000]	99.5% { 95.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 724657	(6.18 , N/A) (N/A , -0.03 , N/A)	867.3	N/A	1.8193 [2.0000]	91.0% { 93.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 373506	(8.09 , N/A) (N/A , -0.01 , N/A)	649.8	N/A	1.6663 [2.0000]	83.3% { 83.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 622191	(9.51 , N/A) (N/A , 0.00 , N/A)	468.7	N/A	1.9936 [2.0000]	99.7% { 97.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 82535	(5.87 , N/A) (N/A , -0.03 , N/A)	489.7	N/A	3.5454 [4.0000]	88.6% { 88.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 98175	(7.60 , N/A) (N/A , -0.01 , N/A)	442.8	N/A	3.4491 [4.0000]	86.2% { 88.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 102316	(9.03 , N/A) (N/A , 0.00 , N/A)	231.1	N/A	3.6030 [4.0000]	90.1% { 92.5% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 990177	(10.18 , N/A) (N/A , 0.01 , N/A)	752.4	N/A	2.0975 [2.0000]	104.9% { 95.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 231043	(10.60 , N/A) (N/A , 0.01 , N/A)	1160.0	N/A	1.9067 [2.0000]	95.3% { 98.7% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 221799	(10.69 , N/A) (N/A , 0.01 , N/A)	1422.5	N/A	2.1097 [2.0000]	105.5% { 103.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B005.wiff- 0
Acquired: 2022/12/13 - 20:03

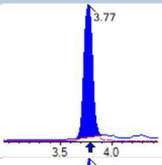
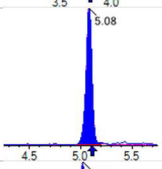
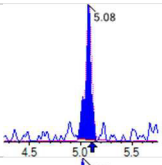
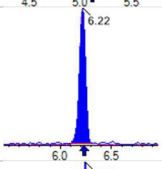
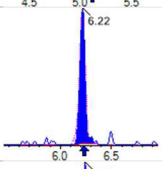
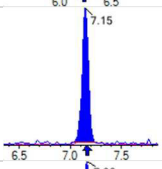
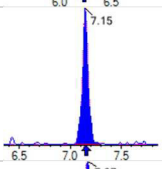
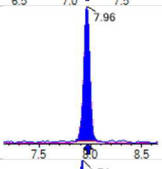
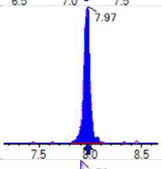
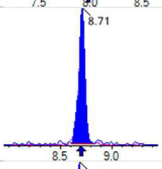
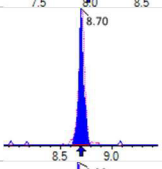
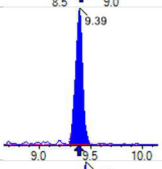
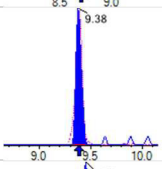
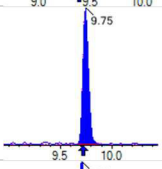
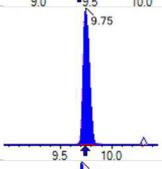
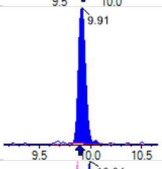
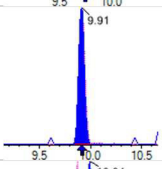
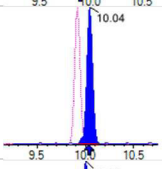
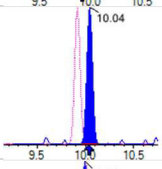
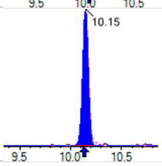
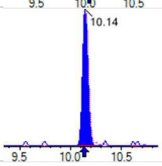
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 269808	(9.55 , N/A) (N/A , 0.00 , N/A)	429.2	N/A	3.6526 [4.0000]	91.3% { 85.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 253220	(9.71 , N/A) (N/A , 0.01 , N/A)	307.0	N/A	3.7885 [4.0000]	94.7% { 85.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 453584	(10.57 , N/A) (N/A , 0.01 , N/A)	1336.4	N/A	19.5254 [20.0000]	97.6% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 258639	(10.66 , N/A) (N/A , 0.01 , N/A)	1148.8	N/A	22.2194 [20.0000]	111.1% { 107.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 714285	(6.56 , N/A) (N/A , -0.02 , N/A)	1151.0	N/A	7.5627 [8.0000]	94.5% { 95.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

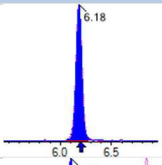
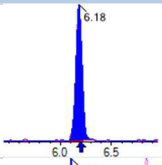
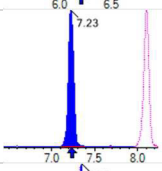
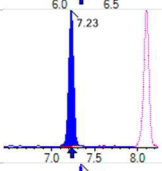
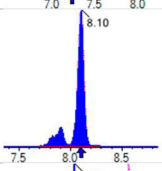
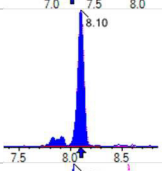
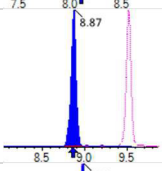
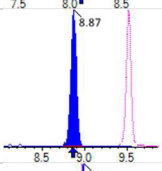
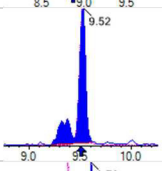
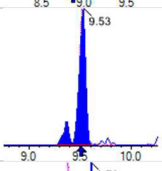
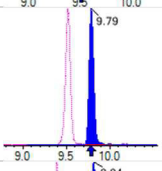
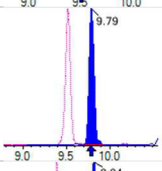
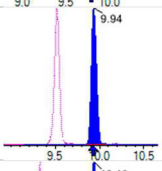
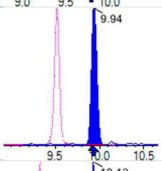
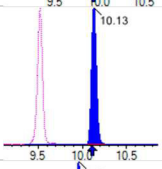
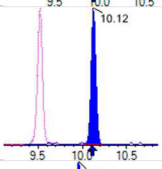
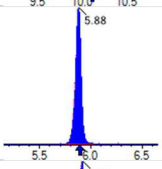
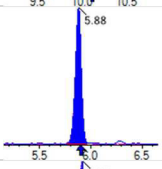
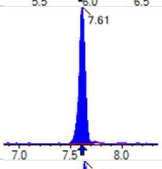
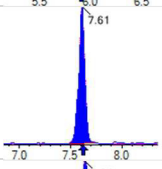
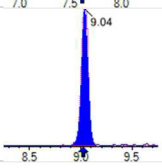
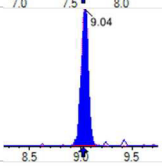
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 138158	(3.77 , 1.00) (0.00 , N/A , 0.0)	60.2	N/A 0.0 0.0	2.0992 [2.0000]	105.0%			
PFPeA	(262.9 / 219.0) 85520 (262.9 / 69.0) 1117	(5.08 , 1.00) (0.00 , N/A , 0.3)	326.7 39.0	0.0131 104.0 104.0	1.0030 [1.0000]	100.3%			
PFHxA	(313.0 / 269.0) 66974 (313.0 / 119.0) 7067	(6.22 , 1.00) (0.00 , N/A , 0.0)	216.8 98.6	0.1055 114.0 114.0	0.4734 [0.5000]	94.7%			
PFHpA	(363.0 / 319.0) 57407 (363.0 / 169.0) 17976	(7.15 , 1.00) (0.00 , N/A , 0.1)	165.5 165.3	0.3131 100.6 100.6	0.4907 [0.5000]	98.1%			
PFOA	(413.0 / 369.0) 69895 (413.0 / 169.0) 22658	(7.96 , 1.00) (0.00 , N/A , -0.1)	252.1 285.6	0.3242 96.6 96.6	0.5320 [0.5000]	106.4%			
PFNA	(463.0 / 419.0) 43265 (463.0 / 169.0) 11688	(8.71 , 1.00) (0.00 , N/A , 0.6)	136.3 98.4	0.2702 153.9 153.9	0.4874 [0.5000]	97.5%			IR2,
PFDA	(513.0 / 469.0) 65847 (513.0 / 169.0) 7781	(9.39 , 1.00) (0.00 , N/A , 0.6)	157.1 165.9	0.1182 117.4 117.4	0.5254 [0.5000]	105.1%			
PFUnA	(563.0 / 519.0) 85629 (563.0 / 169.0) 10386	(9.75 , 1.00) (0.00 , N/A , -0.4)	215.8 2396.2	0.1213 132.5 132.5	0.4859 [0.5000]	97.2%			
PFDoA	(613.0 / 569.0) 78710 (613.0 / 169.0) 10824	(9.91 , 1.00) (0.00 , N/A , 0.2)	195.1 202.6	0.1375 107.3 107.3	0.4220 [0.5000]	84.4%			
PFTrDA	(663.0 / 619.0) 84117 (663.0 / 169.0) 19701	(10.04 , 1.01) (N/A , 0.02 , 0.0)	364.0 122.2	0.2342 106.6 106.6	0.5470 [0.5000]	109.4%			
PFTeDA	(713.0 / 669.0) 68930 (713.0 / 169.0) 14007	(10.15 , 1.00) (0.00 , N/A , 0.2)	263.1 108.2	0.2032 109.2 109.2	0.5699 [0.5000]	114.0%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

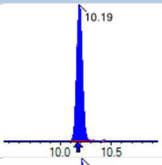
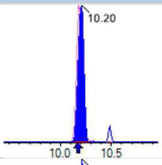
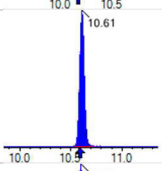
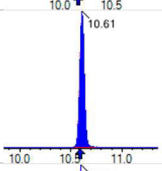
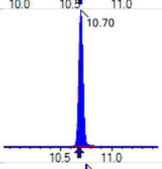
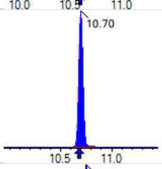
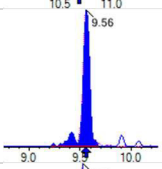
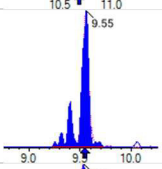
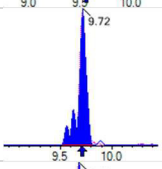
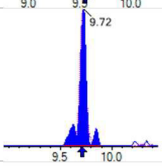
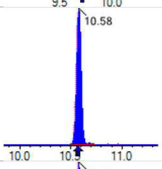
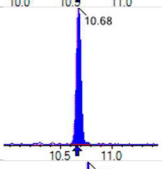
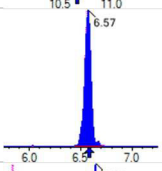
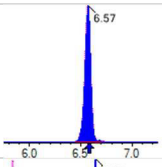
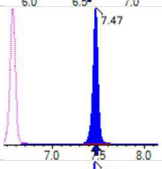
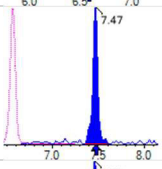
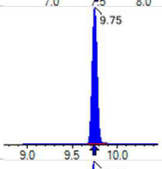
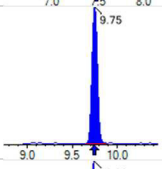
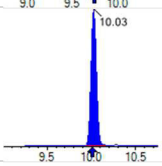
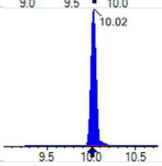
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 98385 (298.9 / 99.0) 60169	(6.18 , 1.00) (0.00 , N/A , 0.0)	490.6 352.1	0.6116 84.9 84.9	0.4839 [0.4424]	109.4%			
PFPeS	(349.0 / 80.0) 169046 (349.0 / 99.0) 57603	(7.23 , 0.89) (N/A , -0.01 , -0.1)	667.5 352.4	0.3408 91.0 91.0	0.4608 [0.4692]	98.2%			
PFHxS	(399.0 / 80.0) 142232 (399.0 / 99.0) 50715	(8.10 , 1.00) (0.00 , N/A , 0.1)	6375.6 2152097.3	0.3566 110.5 110.5	0.4248 [0.4555]	93.3%			
PFHpS	(449.0 / 80.0) 138527 (449.0 / 99.0) 39330	(8.87 , 0.93) (N/A , 0.01 , -0.1)	383.3 375.6	0.2839 92.5 92.5	0.4749 [0.4757]	99.8%			
PFOS	(499.0 / 80.0) 146815 (499.0 / 99.0) 36640	(9.52 , 1.00) (0.00 , N/A , 0.0)	90.2 90.6	0.2496 108.7 108.7	0.4141 [0.4637]	89.3%			
PFNS	(549.0 / 80.0) 216862 (549.0 / 99.0) 50903	(9.79 , 1.03) (N/A , 0.01 , -0.1)	446.7 280.2	0.2347 90.5 90.5	0.4965 [0.4799]	103.4%			
PFDS	(599.0 / 80.0) 267784 (599.0 / 99.0) 63365	(9.94 , 1.04) (N/A , 0.02 , -0.2)	591.3 288.4	0.2366 105.1 105.1	0.4663 [0.4816]	96.8%			
PFDoS	(698.9 / 80.0) 137114 (698.9 / 99.0) 33776	(10.13 , 1.06) (N/A , 0.01 , 0.3)	1423.5 241.0	0.2463 121.7 121.7	0.4720 [0.4848]	97.4%			
4:2FTS	(327.0 / 307.0) 136149 (327.0 / 81.0) 75810	(5.88 , 1.00) (0.00 , N/A , 0.0)	862.4 342.4	0.5568 91.8 91.8	1.8271 [1.8691]	97.8%			
6:2FTS	(427.0 / 407.0) 77294 (427.0 / 81.0) 53012	(7.61 , 1.00) (0.00 , N/A , 0.1)	305.1 285.3	0.6859 105.6 105.6	1.8411 [1.8981]	97.0%			
8:2FTS	(527.0 / 507.0) 70607 (527.0 / 81.0) 43798	(9.04 , 1.00) (0.00 , N/A , -0.2)	200.6 242.3	0.6203 98.9 98.9	2.2137 [1.9166]	115.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

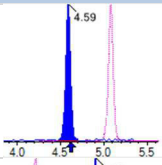
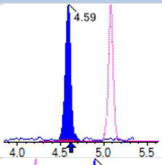
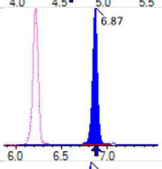
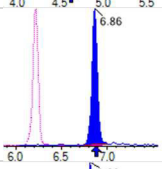
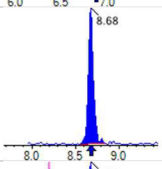
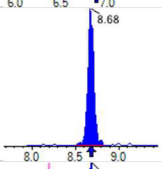
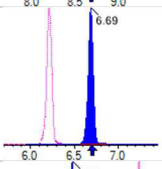
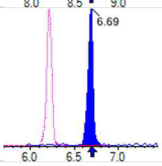
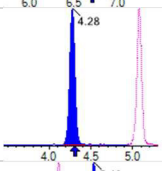
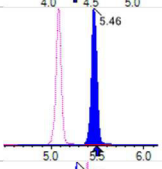
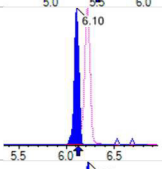
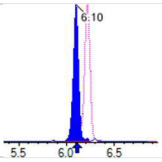
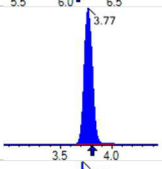
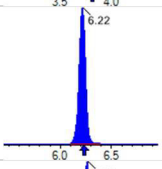
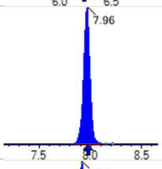
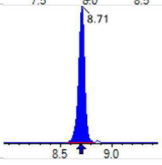
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 215890 (498.0 / 478.0) 4512	(10.19 , 1.00) (0.00 , N/A , -1.0)	703.7 17801.1	0.0209 91.8 91.8	0.4636 [0.5000]	92.7%			
NMeFOSA	(511.9 / 219.0) 207832 (511.9 / 169.0) 143371	(10.61 , 1.00) (0.00 , N/A , -0.1)	914.4 1293.0	0.6898 108.1 108.1	2.1814 [2.0000]	109.1%			
NEtFOSA	(526.0 / 219.0) 196493 (526.0 / 169.0) 206219	(10.70 , 1.00) (0.00 , N/A , 0.0)	1262.4 705.4	1.0495 98.3 98.3	1.9873 [2.0000]	99.4%			
NMeFOSAA	(570.0 / 419.0) 30368 (570.0 / 483.0) 18050	(9.56 , 1.00) (0.01 , N/A , 0.6)	633.8 3449.2	0.5944 103.5 103.5	0.5402 [0.5000]	108.0%			
NEtFOSAA	(584.0 / 419.0) 29876 (584.0 / 526.0) 18031	(9.72 , 1.00) (0.00 , N/A , -0.2)	78.7 178.8	0.6035 106.5 106.5	0.5285 [0.5000]	105.7%			
NMeFOSE	(616.1 / 59.0) 61840	(10.58 , 1.00) (0.01 , N/A , 0.0)	470.9	N/A 0.0 0.0	1.8757 [2.0000]	93.8%			
NEtFOSE	(630.0 / 59.0) 17222	(10.68 , 1.00) (0.01 , N/A , 0.0)	330.9	N/A 0.0 0.0	2.1596 [2.0000]	108.0%			
HFPO-DA	(285.0 / 169.0) 61395 (285.0 / 185.0) 177748	(6.57 , 1.00) (0.00 , N/A , 0.0)	596.1 656.2	2.8951 110.1 110.1	1.0369 [1.0000]	103.7%			
ADONA	(377.0 / 85.0) 220809 (377.0 / 251.0) 27327	(7.47 , 1.14) (N/A , 0.00 , 0.1)	974.2 126.3	0.1238 105.0 105.0	0.8745 [0.9427]	92.8%			
9Cl-Pf3ONS	(531.0 / 351.0) 682603 (533.0 / 353.0) 189730	(9.75 , 1.48) (N/A , 0.01 , 0.0)	943.6 335.9	0.2780 95.9 95.9	0.9534 [0.9333]	102.2%			
11Cl-PF3OUDS	(631.0 / 451.0) 426891 (633.0 / 453.0) 127367	(10.03 , 1.53) (N/A , 0.02 , 0.2)	942.2 856.0	0.2984 94.6 94.6	0.9304 [0.9432]	98.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

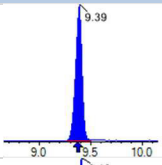
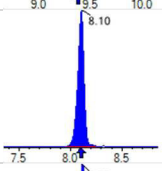
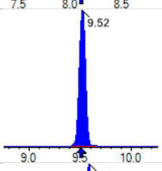
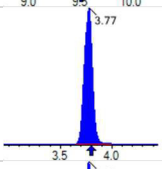
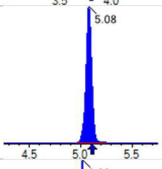
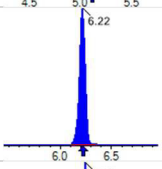
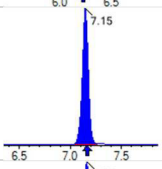
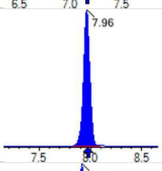
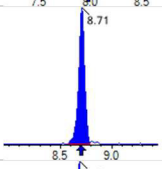
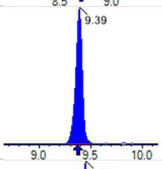
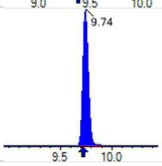
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 6890 (241.0 / 117.0) 12819	(4.59 , 0.90) (N/A , -0.03 , 0.1)	210.0 158.3	1.8605 113.5 113.5	1.9227 [2.0000]	96.1%			
5:3FTCA	(341.0 / 236.7) 59766 (341.0 / 217.0) 87049	(6.87 , 1.10) (N/A , -0.01 , 0.3)	298.2 272.3	1.4565 92.4 92.4	2.1111 [2.0000]	105.6%			
7:3FTCA	(441.0 / 317.0) 68377 (441.0 / 337.0) 45837	(8.68 , 1.40) (N/A , 0.00 , -0.2)	179.9 215.3	0.6704 80.0 80.0	1.9304 [2.0000]	96.5%			
PFEESA	(315.0 / 135.0) 136464 (315.0 / 83.0) 41101	(6.69 , 1.08) (N/A , -0.01 , 0.0)	576.0 207.3	0.3012 98.2 98.2	0.8857 [0.8925]	99.2%			
PFMPA	(229.0 / 85.0) 22934	(4.28 , 0.84) (N/A , -0.03 , 0.0)	486.7	N/A 0.0 0.0	0.9909 [1.0000]	99.1%			
PFMBA	(279.0 / 85.0) 77847	(5.46 , 1.08) (N/A , -0.03 , 0.0)	742.1	N/A 0.0 0.0	1.0050 [1.0000]	100.5%			
NFDHA	(201.0 / 85.0) 3540 (295.0 / 201.0) 16051	(6.10 , 0.98) (N/A , -0.01 , 0.4)	910.7 225.1	4.5335 68.8 68.8	1.1102 [1.0000]	111.0%			
13C3_PFBA_IIS	(216.0 / 172.0) 119009	(3.77 , N/A) (N/A , -0.03 , N/A)	739.0	N/A	0.9808 [1.0000]	98.1% { 94.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 161021	(6.22 , N/A) (N/A , -0.01 , N/A)	719.3	N/A	0.8824 [1.0000]	88.2% { 82.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 167040	(7.96 , N/A) (N/A , 0.00 , N/A)	708.2	N/A	0.9569 [1.0000]	95.7% { 94.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 140805	(8.71 , N/A) (N/A , 0.00 , N/A)	441.9	N/A	1.0362 [1.0000]	103.6% { 106.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

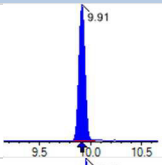
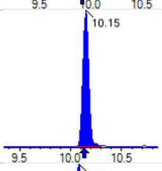
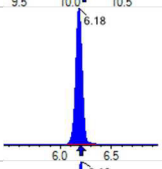
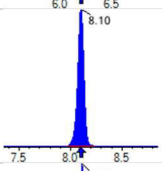
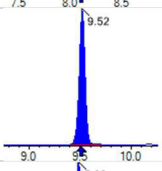
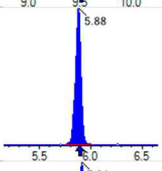
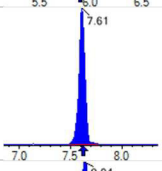
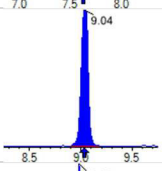
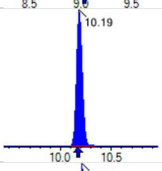
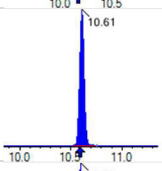
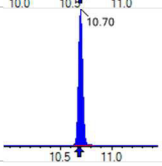
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 131343	(9.39 , N/A) (N/A , 0.01 , N/A)	303.6	N/A	0.9466 [1.0000]	94.7% { 93.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 325843	(8.10 , N/A) (N/A , 0.00 , N/A)	633.1	N/A	1.0096 [1.0000]	101.0% { 97.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 220313	(9.52 , N/A) (N/A , 0.01 , N/A)	576.1	N/A	0.8749 [1.0000]	87.5% { 79.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 749557	(3.77 , N/A) (N/A , -0.03 , N/A)	907.4	N/A	8.2627 [8.0000]	103.3% { 94.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 384230	(5.08 , N/A) (N/A , -0.03 , N/A)	746.2	N/A	4.3089 [4.0000]	107.7% { 90.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 319308	(6.22 , N/A) (N/A , -0.01 , N/A)	530.2	N/A	2.3530 [2.0000]	117.7% { 100.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 252836	(7.15 , N/A) (N/A , -0.01 , N/A)	580.7	N/A	2.1463 [2.0000]	107.3% { 87.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 262957	(7.96 , N/A) (N/A , 0.00 , N/A)	661.6	N/A	2.0530 [2.0000]	102.6% { 97.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 97363	(8.71 , N/A) (N/A , 0.01 , N/A)	292.3	N/A	0.8975 [1.0000]	89.8% { 90.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 123952	(9.39 , N/A) (N/A , 0.01 , N/A)	403.9	N/A	0.9840 [1.0000]	98.4% { 101.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 203167	(9.74 , N/A) (N/A , 0.01 , N/A)	438.5	N/A	1.1743 [1.0000]	117.4% { 109.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

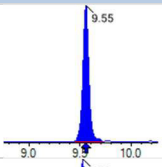
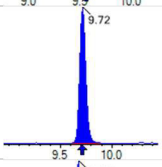
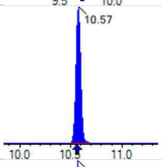
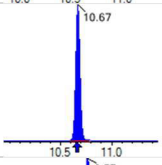
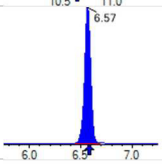
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 215396	(9.91 , N/A) (N/A , 0.01 , N/A)	405.5	N/A	1.0124 [1.0000]	101.2% { 88.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 132346	(10.15 , N/A) (N/A , 0.02 , N/A)	330.5	N/A	0.9907 [1.0000]	99.1% { 88.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 719638	(6.18 , N/A) (N/A , -0.02 , N/A)	872.8	N/A	1.9194 [2.0000]	96.0% { 93.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 416949	(8.10 , N/A) (N/A , 0.00 , N/A)	931.5	N/A	1.9761 [2.0000]	98.8% { 93.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 644812	(9.52 , N/A) (N/A , 0.01 , N/A)	456.6	N/A	2.3507 [2.0000]	117.5% { 100.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 91413	(5.88 , N/A) (N/A , -0.02 , N/A)	640.5	N/A	4.1717 [4.0000]	104.3% { 97.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 103029	(7.61 , N/A) (N/A , -0.01 , N/A)	610.4	N/A	3.8455 [4.0000]	96.1% { 92.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 89583	(9.04 , N/A) (N/A , 0.01 , N/A)	407.8	N/A	3.3514 [4.0000]	83.8% { 81.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 949565	(10.19 , N/A) (N/A , 0.01 , N/A)	791.6	N/A	2.2886 [2.0000]	114.4% { 91.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 229035	(10.61 , N/A) (N/A , 0.01 , N/A)	844.2	N/A	2.1505 [2.0000]	107.5% { 97.9% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 213925	(10.70 , N/A) (N/A , 0.01 , N/A)	1550.4	N/A	2.3151 [2.0000]	115.8% { 99.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B006.wiff- 0
Acquired: 2022/12/13 - 20:16

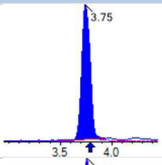
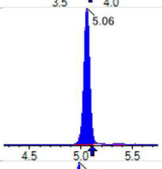
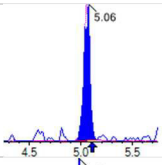
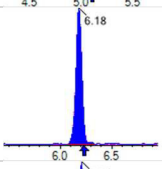
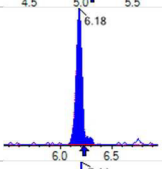
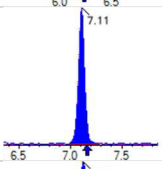
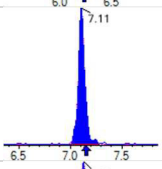
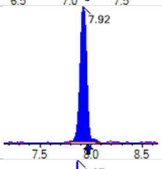
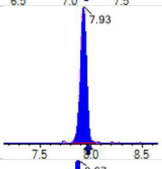
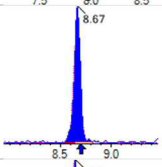
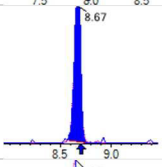
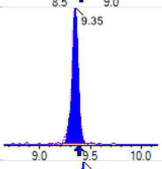
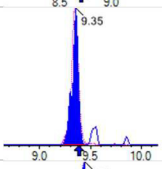
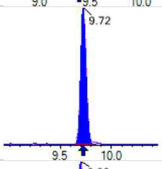
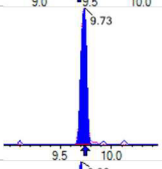
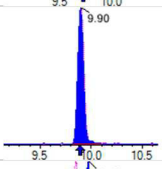
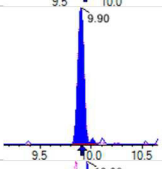
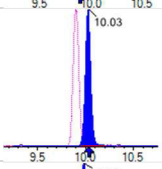
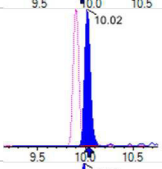
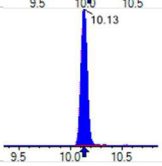
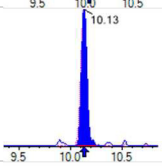
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 290884	(9.55 , N/A) (N/A , 0.01 , N/A)	371.3	N/A	4.4803 [4.0000]	112.0% { 92.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 259771	(9.72 , N/A) (N/A , 0.01 , N/A)	320.8	N/A	4.4219 [4.0000]	110.5% { 87.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 488729	(10.57 , N/A) (N/A , 0.01 , N/A)	1066.9	N/A	23.9364 [20.0000]	119.7% { 107.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 235750	(10.67 , N/A) (N/A , 0.01 , N/A)	1081.5	N/A	23.0429 [20.0000]	115.2% { 98.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 765965	(6.57 , N/A) (N/A , -0.01 , N/A)	870.3	N/A	9.2149 [8.0000]	115.2% { 102.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

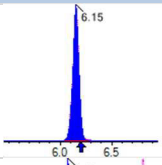
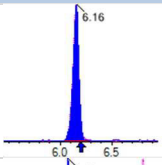
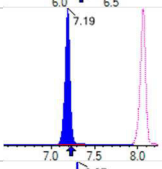
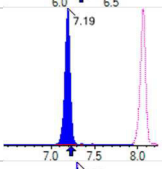
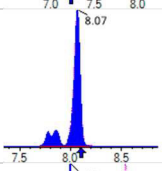
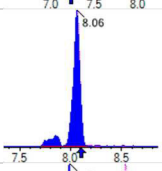
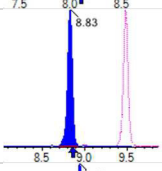
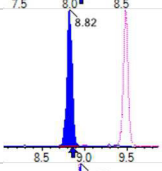
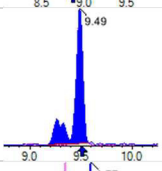
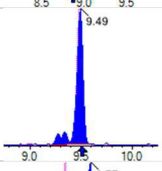
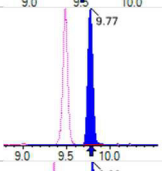
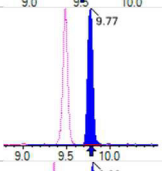
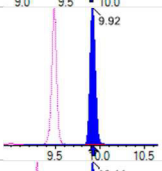
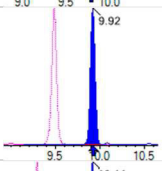
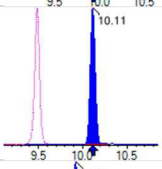
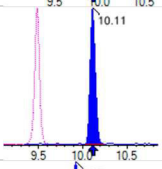
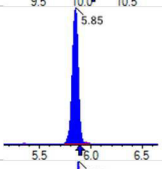
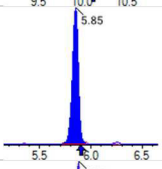
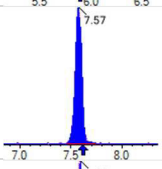
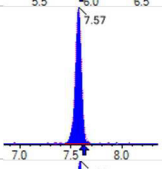
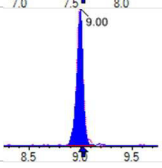
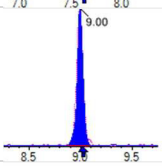
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 286089	(3.75 , 1.00) (0.00 , N/A , 0.0)	57.3	N/A 0.0 0.0	4.1304 [4.0000]	103.3%			
PFPeA	(262.9 / 219.0) 202602 (262.9 / 69.0) 2175	(5.06 , 1.00) (0.00 , N/A , -0.2)	639.3 74.9	0.0107 85.5 85.5	2.1827 [2.0000]	109.1%			
PFHxA	(313.0 / 269.0) 153870 (313.0 / 119.0) 14085	(6.18 , 1.00) (0.00 , N/A , -0.1)	400.2 151.8	0.0915 98.9 98.9	1.1157 [1.0000]	111.6%			
PFHpA	(363.0 / 319.0) 126404 (363.0 / 169.0) 40384	(7.11 , 1.00) (0.00 , N/A , 0.1)	329.5 335.9	0.3195 102.7 102.7	1.0045 [1.0000]	100.5%			
PFOA	(413.0 / 369.0) 136637 (413.0 / 169.0) 46925	(7.92 , 1.00) (0.00 , N/A , -0.1)	265.4 347.5	0.3434 102.3 102.3	0.9025 [1.0000]	90.2%			
PFNA	(463.0 / 419.0) 96070 (463.0 / 169.0) 21110	(8.67 , 1.00) (0.00 , N/A , -0.1)	182.5 96.9	0.2197 125.2 125.2	0.9503 [1.0000]	95.0%			
PFDA	(513.0 / 469.0) 153540 (513.0 / 169.0) 8560	(9.35 , 1.00) (0.00 , N/A , -0.3)	220.9 151.7	0.0557 55.4 55.4	1.2215 [1.0000]	122.1%			
PFUnA	(563.0 / 519.0) 184875 (563.0 / 169.0) 18703	(9.72 , 1.00) (0.00 , N/A , -0.4)	469.5 333.6	0.1012 110.5 110.5	1.0643 [1.0000]	106.4%			
PFDoA	(613.0 / 569.0) 199772 (613.0 / 169.0) 25044	(9.90 , 1.00) (0.00 , N/A , -0.2)	529.1 171.9	0.1254 97.8 97.8	1.0717 [1.0000]	107.2%			
PFTrDA	(663.0 / 619.0) 168594 (663.0 / 169.0) 32392	(10.03 , 1.01) (N/A , 0.00 , 0.4)	488.0 158.2	0.1921 87.5 87.5	1.0970 [1.0000]	109.7%			
PFTeDA	(713.0 / 669.0) 139003 (713.0 / 169.0) 24209	(10.13 , 1.00) (0.00 , N/A , 0.0)	416.2 121.0	0.1742 93.6 93.6	0.9438 [1.0000]	94.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

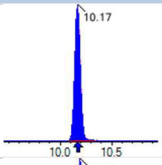
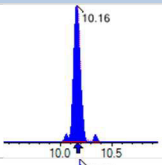
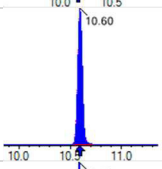
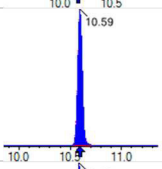
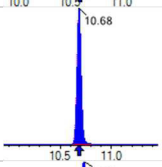
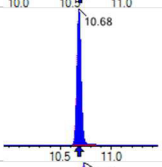
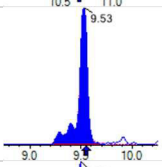
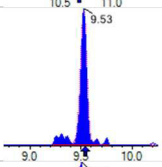
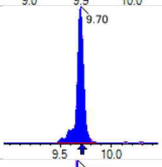
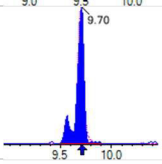
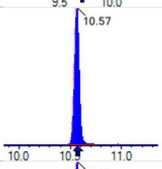
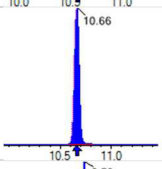
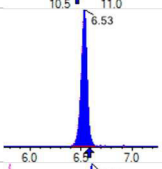
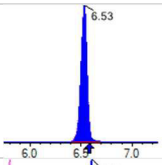
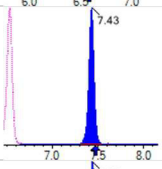
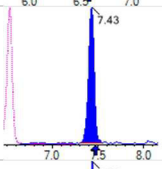
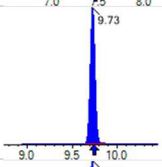
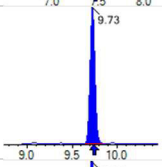
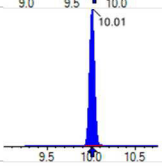
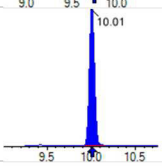
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 191673 (298.9 / 99.0) 128553	(6.15 , 1.00) (0.00 , N/A , -0.1)	576.5 459.4	0.6707 93.1 93.1	0.9529 [0.8847]	107.7%			
PFPeS	(349.0 / 80.0) 358754 (349.0 / 99.0) 141868	(7.19 , 0.89) (N/A , -0.05 , 0.0)	462.5 578.8	0.3954 105.6 105.6	0.9428 [0.9384]	100.5%			
PFHxS	(399.0 / 80.0) 313682 (399.0 / 99.0) 108173	(8.07 , 1.00) (0.00 , N/A , 0.3)	7447.6 551.2	0.3448 106.9 106.9	0.9031 [0.9110]	99.1%			
PFHpS	(449.0 / 80.0) 300689 (449.0 / 99.0) 77253	(8.83 , 0.93) (N/A , -0.03 , 0.3)	634.4 403.9	0.2569 83.7 83.7	0.9323 [0.9514]	98.0%			
PFOS	(499.0 / 80.0) 306402 (499.0 / 99.0) 79702	(9.49 , 1.00) (0.00 , N/A , -0.2)	118.3 173.3	0.2601 113.3 113.3	0.7817 [0.9275]	84.3%			
PFNS	(549.0 / 80.0) 426081 (549.0 / 99.0) 110896	(9.77 , 1.03) (N/A , -0.01 , 0.0)	688.6 455.9	0.2603 100.4 100.4	0.8823 [0.9599]	91.9%			
PFDS	(599.0 / 80.0) 562719 (599.0 / 99.0) 118496	(9.92 , 1.05) (N/A , 0.00 , -0.1)	654.0 350.3	0.2106 93.6 93.6	0.8864 [0.9631]	92.0%			
PFDoS	(698.9 / 80.0) 287677 (698.9 / 99.0) 54881	(10.11 , 1.07) (N/A , 0.00 , 0.1)	490.6 316.2	0.1908 94.2 94.2	0.8957 [0.9696]	92.4%			
4:2FTS	(327.0 / 307.0) 285704 (327.0 / 81.0) 161593	(5.85 , 1.00) (0.00 , N/A , -0.1)	925.4 521.9	0.5656 93.2 93.2	4.0397 [3.7381]	108.1%			
6:2FTS	(427.0 / 407.0) 163918 (427.0 / 81.0) 131103	(7.57 , 1.00) (0.00 , N/A , 0.0)	548.4 562.5	0.7998 123.1 123.1	3.8539 [3.7962]	101.5%			
8:2FTS	(527.0 / 507.0) 155355 (527.0 / 81.0) 99865	(9.00 , 1.00) (0.00 , N/A , 0.0)	370.4 521.9	0.6428 102.5 102.5	4.2665 [3.8332]	111.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

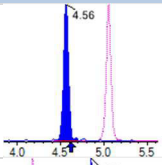
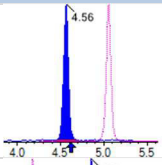
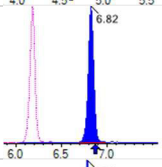
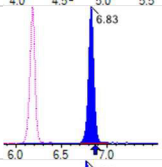
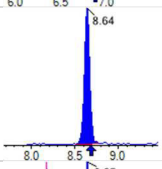
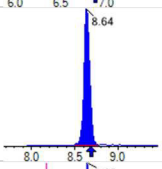
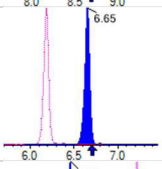
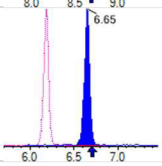
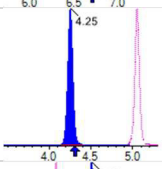
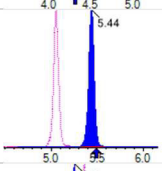
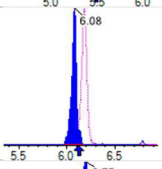
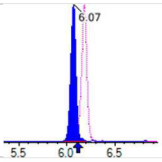
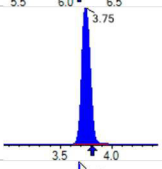
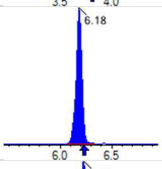
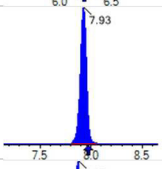
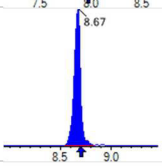
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 520801 (498.0 / 478.0) 10727	(10.17 , 1.00) (0.00 , N/A , 0.4)	685.9 2230.8	0.0206 90.5 90.5	1.2232 [1.0000]	122.3%			
NMeFOSA	(511.9 / 219.0) 439602 (511.9 / 169.0) 301983	(10.60 , 1.00) (0.00 , N/A , 0.0)	1177.9 909.9	0.6869 107.7 107.7	4.0451 [4.0000]	101.1%			
NEtFOSA	(526.0 / 219.0) 392794 (526.0 / 169.0) 416279	(10.68 , 1.00) (0.00 , N/A , 0.1)	1033.5 1009.7	1.0598 99.3 99.3	3.8802 [4.0000]	97.0%			
NMeFOSAA	(570.0 / 419.0) 56144 (570.0 / 483.0) 35133	(9.53 , 1.00) (0.00 , N/A , 0.0)	196.0 687.8	0.6258 109.0 109.0	0.9356 [1.0000]	93.6%			
NEtFOSAA	(584.0 / 419.0) 67385 (584.0 / 526.0) 44915	(9.70 , 1.00) (0.00 , N/A , -0.4)	2242.8 199.9	0.6665 117.6 117.6	1.0604 [1.0000]	106.0%			
NMeFOSE	(616.1 / 59.0) 135458	(10.57 , 1.00) (0.01 , N/A , 0.0)	540.1	N/A 0.0 0.0	4.2377 [4.0000]	105.9%			
NEtFOSE	(630.0 / 59.0) 31631	(10.66 , 1.00) (0.01 , N/A , 0.0)	839.9	N/A 0.0 0.0	3.6463 [4.0000]	91.2%			
HFPO-DA	(285.0 / 169.0) 134273 (285.0 / 185.0) 358772	(6.53 , 1.00) (0.00 , N/A , 0.1)	528.2 789.7	2.6720 101.6 101.6	2.1807 [2.0000]	109.0%			
ADONA	(377.0 / 85.0) 493581 (377.0 / 251.0) 63026	(7.43 , 1.14) (N/A , -0.04 , 0.0)	917.9 253.3	0.1277 108.3 108.3	1.8797 [1.8854]	99.7%			
9Cl-Pf3ONS	(531.0 / 351.0) 1496463 (533.0 / 353.0) 437182	(9.73 , 1.49) (N/A , -0.01 , 0.1)	837.0 467.1	0.2921 100.8 100.8	2.0100 [1.8665]	107.7%			
11Cl-PF3OUDS	(631.0 / 451.0) 985277 (633.0 / 453.0) 294025	(10.01 , 1.53) (N/A , 0.00 , 0.1)	789.7 773.3	0.2984 94.6 94.6	2.0650 [1.8864]	109.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

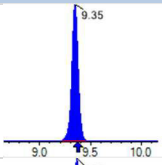
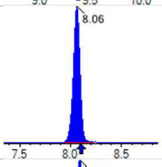
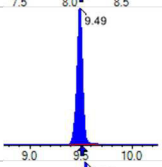
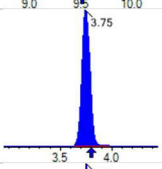
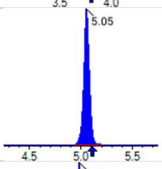
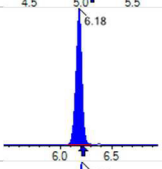
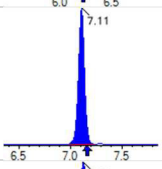
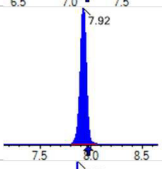
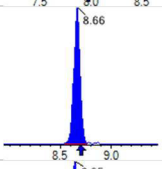
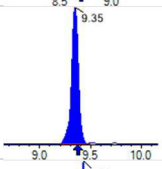
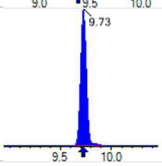
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 15864 (241.0 / 117.0) 25929	(4.56 , 0.90) (N/A , -0.06 , 0.0)	269.3 352.9	1.6345 99.7 99.7	4.0668 [4.0000]	101.7%			
5:3FTCA	(341.0 / 236.7) 129323 (341.0 / 217.0) 197212	(6.82 , 1.10) (N/A , -0.05 , -0.1)	544.0 535.9	1.5250 96.8 96.8	4.6862 [4.0000]	117.2%			
7:3FTCA	(441.0 / 317.0) 142868 (441.0 / 337.0) 120048	(8.64 , 1.40) (N/A , -0.04 , 0.2)	295.9 276.8	0.8403 100.3 100.3	4.1377 [4.0000]	103.4%			
PFEESA	(315.0 / 135.0) 268946 (315.0 / 83.0) 76675	(6.65 , 1.08) (N/A , -0.05 , 0.1)	700.7 361.7	0.2851 93.0 93.0	1.7907 [1.7849]	100.3%			
PFMPA	(229.0 / 85.0) 56395	(4.25 , 0.84) (N/A , -0.05 , 0.0)	1073.5	N/A 0.0 0.0	2.2383 [2.0000]	111.9%			
PFMBA	(279.0 / 85.0) 170354	(5.44 , 1.08) (N/A , -0.05 , 0.0)	1011.5	N/A 0.0 0.0	2.0202 [2.0000]	101.0%			
NFDHA	(201.0 / 85.0) 5239 (295.0 / 201.0) 43731	(6.08 , 0.98) (N/A , -0.04 , 0.7)	4322.4 409.9	8.3466 126.7 126.7	1.7496 [2.0000]	87.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 123217	(3.75 , N/A) (N/A , -0.05 , N/A)	664.9	N/A	1.0155 [1.0000]	101.6% { 97.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 180863	(6.18 , N/A) (N/A , -0.05 , N/A)	639.2	N/A	0.9911 [1.0000]	99.1% { 92.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 178855	(7.93 , N/A) (N/A , -0.04 , N/A)	693.3	N/A	1.0246 [1.0000]	102.5% { 101.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 124477	(8.67 , N/A) (N/A , -0.04 , N/A)	361.1	N/A	0.9160 [1.0000]	91.6% { 94.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

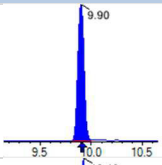
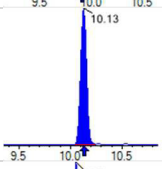
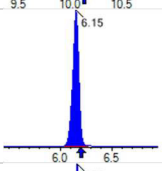
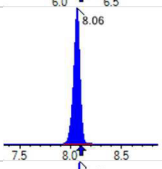
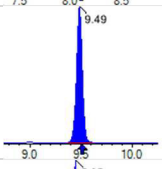
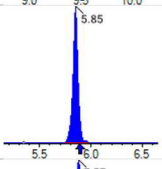
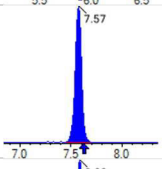
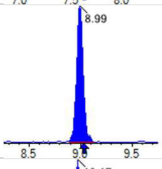
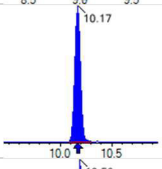
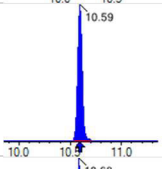
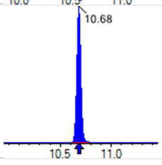
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 145971	(9.35 , N/A) (N/A , -0.03 , N/A)	439.8	N/A	1.0520 [1.0000]	105.2% { 103.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 280404	(8.06 , N/A) (N/A , -0.04 , N/A)	601.9	N/A	0.8688 [1.0000]	86.9% { 83.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 247940	(9.49 , N/A) (N/A , -0.02 , N/A)	508.0	N/A	0.9846 [1.0000]	98.5% { 89.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 788825	(3.75 , N/A) (N/A , -0.05 , N/A)	844.2	N/A	8.3986 [8.0000]	105.0% { 99.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 418273	(5.05 , N/A) (N/A , -0.05 , N/A)	968.1	N/A	4.1761 [4.0000]	104.4% { 98.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 311255	(6.18 , N/A) (N/A , -0.04 , N/A)	797.6	N/A	2.0420 [2.0000]	102.1% { 98.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 271930	(7.11 , N/A) (N/A , -0.05 , N/A)	747.8	N/A	2.0552 [2.0000]	102.8% { 94.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 303011	(7.92 , N/A) (N/A , -0.04 , N/A)	739.1	N/A	2.2094 [2.0000]	110.5% { 111.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 110892	(8.66 , N/A) (N/A , -0.04 , N/A)	451.7	N/A	1.1563 [1.0000]	115.6% { 102.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 124317	(9.35 , N/A) (N/A , -0.03 , N/A)	356.0	N/A	0.8880 [1.0000]	88.8% { 102.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 200241	(9.73 , N/A) (N/A , -0.01 , N/A)	559.9	N/A	1.0414 [1.0000]	104.1% { 107.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

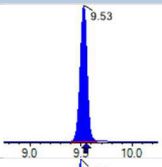
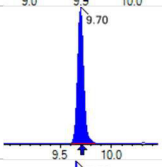
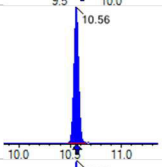
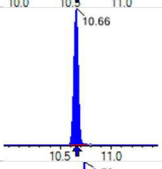
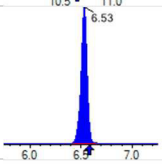
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 215256	(9.90 , N/A) (N/A , 0.00 , N/A)	270.0	N/A	0.9104 [1.0000]	91.0% { 88.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 161157	(10.13 , N/A) (N/A , 0.00 , N/A)	471.6	N/A	1.0855 [1.0000]	108.5% { 108.3% }			
13C3_PFBS_EIS	(302.0 / 80.0) 712022	(6.15 , N/A) (N/A , -0.05 , N/A)	814.1	N/A	2.2069 [2.0000]	110.3% { 92.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 432539	(8.06 , N/A) (N/A , -0.04 , N/A)	792.2	N/A	2.3822 [2.0000]	119.1% { 96.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 712886	(9.49 , N/A) (N/A , -0.02 , N/A)	614.2	N/A	2.3093 [2.0000]	115.5% { 111.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 86760	(5.85 , N/A) (N/A , -0.05 , N/A)	552.9	N/A	4.6010 [4.0000]	115.0% { 92.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 104379	(7.57 , N/A) (N/A , -0.05 , N/A)	579.1	N/A	4.5272 [4.0000]	113.2% { 93.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 102270	(8.99 , N/A) (N/A , -0.03 , N/A)	334.2	N/A	4.4460 [4.0000]	111.1% { 92.4% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 868083	(10.17 , N/A) (N/A , 0.00 , N/A)	752.1	N/A	1.8591 [2.0000]	93.0% { 83.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 261253	(10.59 , N/A) (N/A , 0.00 , N/A)	1332.1	N/A	2.1797 [2.0000]	109.0% { 111.7% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 219027	(10.68 , N/A) (N/A , 0.00 , N/A)	1514.2	N/A	2.1062 [2.0000]	105.3% { 102.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B007.wiff- 0
Acquired: 2022/12/13 - 20:29

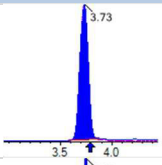
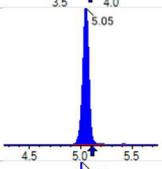
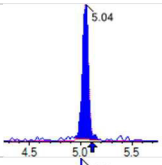
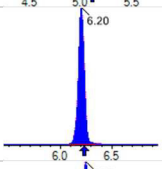
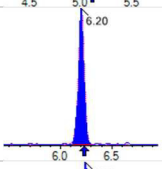
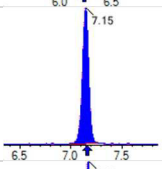
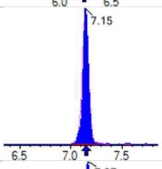
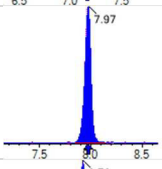
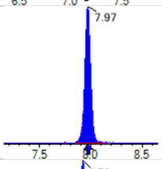
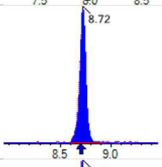
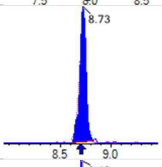
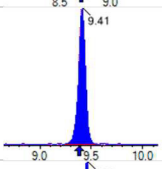
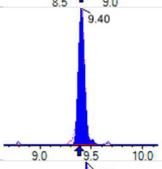
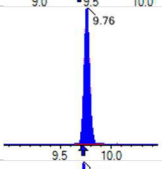
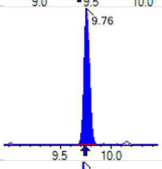
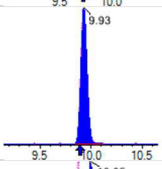
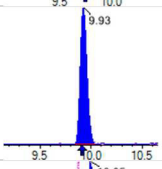
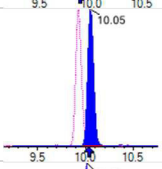
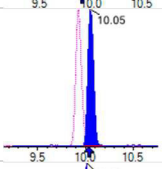
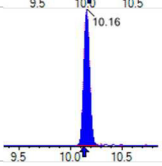
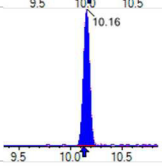
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 310510	(9.53 , N/A) (N/A , -0.02 , N/A)	387.9	N/A	4.2497 [4.0000]	106.2% { 98.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 291996	(9.70 , N/A) (N/A , -0.01 , N/A)	468.5	N/A	4.4166 [4.0000]	110.4% { 98.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 473858	(10.56 , N/A) (N/A , 0.00 , N/A)	1209.3	N/A	20.6221 [20.0000]	103.1% { 104.4% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 256439	(10.66 , N/A) (N/A , 0.00 , N/A)	1119.3	N/A	22.2722 [20.0000]	111.4% { 106.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 796536	(6.53 , N/A) (N/A , -0.04 , N/A)	723.5	N/A	8.5313 [8.0000]	106.6% { 106.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

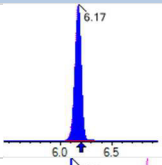
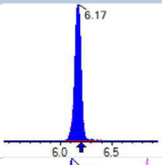
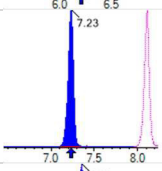
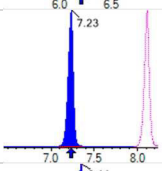
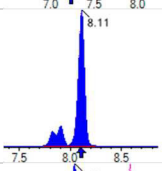
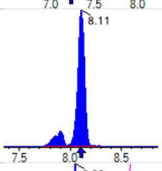
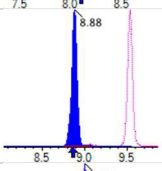
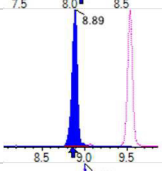
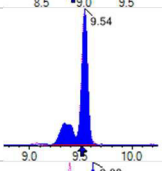
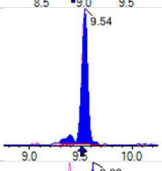
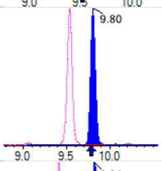
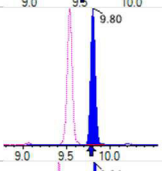
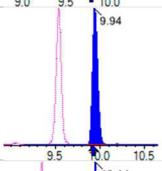
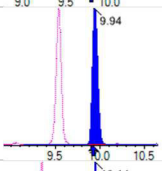
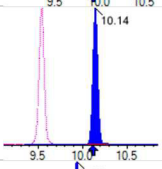
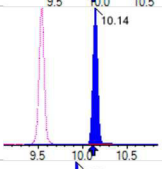
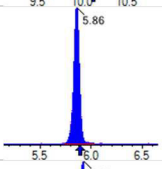
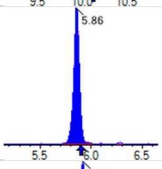
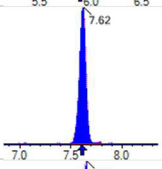
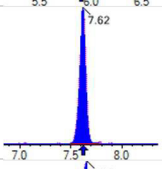
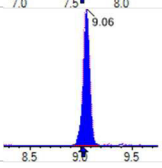
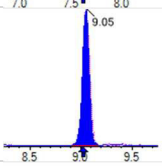
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 550373	(3.73 , 1.00) (0.00 , N/A , 0.0)	58.9	N/A 0.0 0.0	7.5900 [8.0000]	94.9%			
PFPeA	(262.9 / 219.0) 383100 (262.9 / 69.0) 4305	(5.05 , 1.00) (0.00 , N/A , 0.3)	709.0 112.5	0.0112 89.5 89.5	4.0729 [4.0000]	101.8%			
PFHxA	(313.0 / 269.0) 324173 (313.0 / 119.0) 27576	(6.20 , 1.00) (0.00 , N/A , 0.1)	667.7 266.6	0.0851 91.9 91.9	2.2752 [2.0000]	113.8%			
PFHpA	(363.0 / 319.0) 256354 (363.0 / 169.0) 78391	(7.15 , 1.00) (0.00 , N/A , -0.1)	399.5 489.1	0.3058 98.3 98.3	2.0746 [2.0000]	103.7%			
PFOA	(413.0 / 369.0) 281677 (413.0 / 169.0) 81439	(7.97 , 1.00) (0.00 , N/A , 0.2)	513.6 615.7	0.2891 86.1 86.1	2.1612 [2.0000]	108.1%			
PFNA	(463.0 / 419.0) 216490 (463.0 / 169.0) 38771	(8.72 , 1.00) (0.00 , N/A , -0.1)	461.9 58.9	0.1791 102.0 102.0	2.0787 [2.0000]	103.9%			
PFDA	(513.0 / 469.0) 268294 (513.0 / 169.0) 27057	(9.41 , 1.00) (0.00 , N/A , 0.4)	272.9 488.7	0.1008 100.2 100.2	1.8135 [2.0000]	90.7%			
PFUnA	(563.0 / 519.0) 346382 (563.0 / 169.0) 34030	(9.76 , 1.00) (0.00 , N/A , 0.1)	569.8 448.9	0.0982 107.3 107.3	2.0159 [2.0000]	100.8%			
PFDoA	(613.0 / 569.0) 411487 (613.0 / 169.0) 64177	(9.93 , 1.00) (0.00 , N/A , 0.3)	574.0 365.1	0.1560 121.7 121.7	2.1263 [2.0000]	106.3%			
PFTrDA	(663.0 / 619.0) 334895 (663.0 / 169.0) 61327	(10.05 , 1.01) (N/A , 0.03 , 0.0)	593.0 689.7	0.1831 83.4 83.4	2.0990 [2.0000]	105.0%			
PFTeDA	(713.0 / 669.0) 272344 (713.0 / 169.0) 47627	(10.16 , 1.00) (0.00 , N/A , 0.0)	456.3 203.3	0.1749 94.0 94.0	1.8884 [2.0000]	94.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

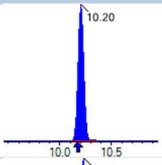
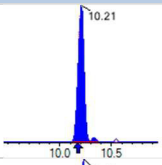
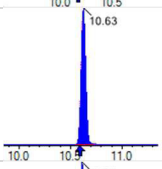
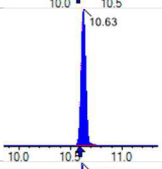
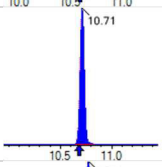
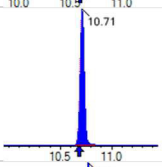
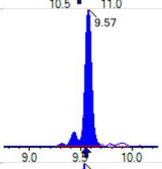
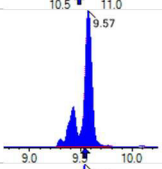
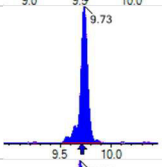
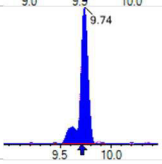
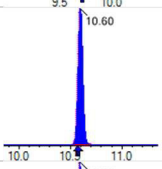
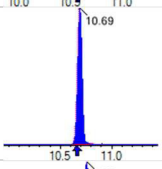
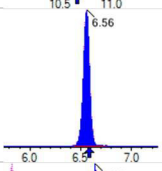
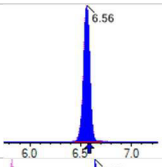
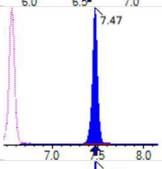
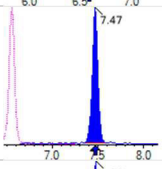
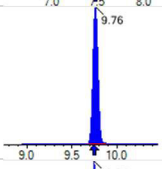
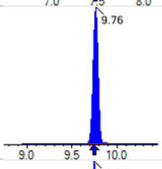
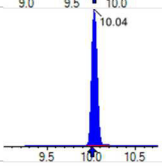
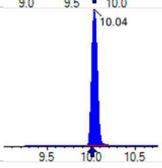
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 394838 (298.9 / 99.0) 255282	(6.17 , 1.00) (0.00 , N/A , 0.2)	894.8 608.3	0.6465 89.8 89.8	1.7849 [1.7695]	100.9%			
PFPeS	(349.0 / 80.0) 735475 (349.0 / 99.0) 258656	(7.23 , 0.89) (N/A , -0.01 , 0.1)	728.3 789.1	0.3517 93.9 93.9	2.0314 [1.8768]	108.2%			
PFHxS	(399.0 / 80.0) 647267 (399.0 / 99.0) 210842	(8.11 , 1.00) (0.00 , N/A , 0.1)	3082.7 7097017.9	0.3257 101.0 101.0	1.9585 [1.8220]	107.5%			
PFHpS	(449.0 / 80.0) 557426 (449.0 / 99.0) 166159	(8.88 , 0.93) (N/A , 0.02 , -0.3)	619.2 584.9	0.2981 97.1 97.1	1.9512 [1.9028]	102.5%			
PFOS	(499.0 / 80.0) 679722 (499.0 / 99.0) 147898	(9.54 , 1.00) (0.00 , N/A , -0.1)	133.9 224.2	0.2176 94.8 94.8	1.9578 [1.8550]	105.5%			
PFNS	(549.0 / 80.0) 874769 (549.0 / 99.0) 233196	(9.80 , 1.03) (N/A , 0.03 , 0.0)	588.8 563.9	0.2666 102.8 102.8	2.0449 [1.9198]	106.5%			
PFDS	(599.0 / 80.0) 1132238 (599.0 / 99.0) 261904	(9.94 , 1.04) (N/A , 0.03 , 0.0)	833.0 372.5	0.2313 102.8 102.8	2.0133 [1.9262]	104.5%			
PFDoS	(698.9 / 80.0) 620326 (698.9 / 99.0) 134667	(10.14 , 1.06) (N/A , 0.03 , 0.0)	909.9 589.1	0.2171 107.2 107.2	2.1805 [1.9391]	112.4%			
4:2FTS	(327.0 / 307.0) 583713 (327.0 / 81.0) 342931	(5.86 , 1.00) (0.00 , N/A , 0.0)	554.4 569.1	0.5875 96.8 96.8	7.6540 [7.4762]	102.4%			
6:2FTS	(427.0 / 407.0) 346947 (427.0 / 81.0) 249994	(7.62 , 1.00) (0.00 , N/A , -0.1)	799.8 699.0	0.7206 110.9 110.9	8.2249 [7.5923]	108.3%			
8:2FTS	(527.0 / 507.0) 272160 (527.0 / 81.0) 184884	(9.06 , 1.00) (0.00 , N/A , 0.5)	443.7 417.4	0.6793 108.4 108.4	8.1586 [7.6663]	106.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

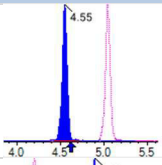
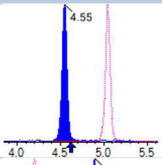
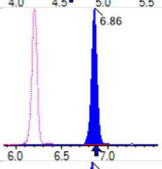
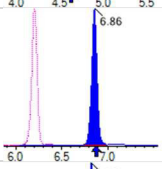
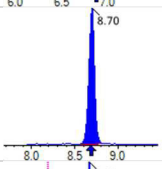
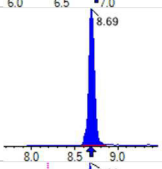
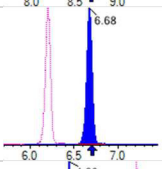
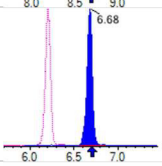
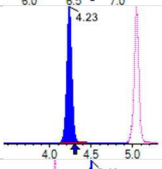
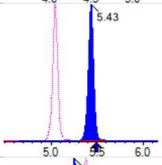
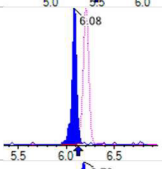
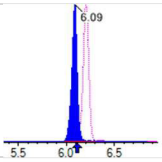
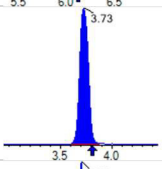
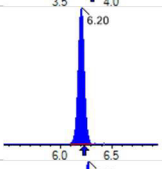
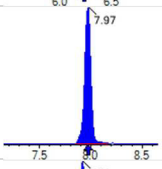
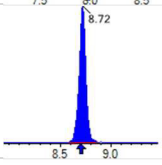
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1055355 (498.0 / 478.0) 23717	(10.20 , 1.00) (0.00 , N/A , -0.2)	1740.9 915.3	0.0225 98.7 98.7	2.0546 [2.0000]	102.7%			
NMeFOSA	(511.9 / 219.0) 941469 (511.9 / 169.0) 600724	(10.63 , 1.00) (0.00 , N/A , 0.0)	1442.5 1273.9	0.6381 100.0 100.0	9.0831 [8.0000]	113.5%			
NEtFOSA	(526.0 / 219.0) 832227 (526.0 / 169.0) 857007	(10.71 , 1.00) (0.00 , N/A , 0.0)	1232.2 1584.6	1.0298 96.5 96.5	8.3617 [8.0000]	104.5%			
NMeFOSAA	(570.0 / 419.0) 142744 (570.0 / 483.0) 67173	(9.57 , 1.00) (0.00 , N/A , -0.1)	392.8 1469.6	0.4706 82.0 82.0	2.4171 [2.0000]	120.9%			
NEtFOSAA	(584.0 / 419.0) 129386 (584.0 / 526.0) 81840	(9.73 , 1.00) (0.00 , N/A , -0.1)	885.2 141670.6	0.6325 111.6 111.6	2.0121 [2.0000]	100.6%			
NMeFOSE	(616.1 / 59.0) 274757	(10.60 , 1.00) (0.01 , N/A , 0.0)	1125.9	N/A 0.0 0.0	8.1002 [8.0000]	101.3%			
NEtFOSE	(630.0 / 59.0) 70326	(10.69 , 1.00) (0.01 , N/A , 0.0)	1118.0	N/A 0.0 0.0	7.9166 [8.0000]	99.0%			
HFPO-DA	(285.0 / 169.0) 233541 (285.0 / 185.0) 742104	(6.56 , 1.00) (0.00 , N/A , -0.1)	585.7 1161.5	3.1776 120.8 120.8	3.9237 [4.0000]	98.1%			
ADONA	(377.0 / 85.0) 992581 (377.0 / 251.0) 114079	(7.47 , 1.14) (N/A , 0.00 , -0.1)	771.3 344.3	0.1149 97.5 97.5	3.9105 [3.7708]	103.7%			
9Cl-Pf3ONS	(531.0 / 351.0) 2944974 (533.0 / 353.0) 963571	(9.76 , 1.49) (N/A , 0.03 , -0.1)	1153.7 611.1	0.3272 112.9 112.9	4.0920 [3.7330]	109.6%			
11Cl-PF3OUDS	(631.0 / 451.0) 1815586 (633.0 / 453.0) 570123	(10.04 , 1.53) (N/A , 0.03 , -0.1)	920.5 823.1	0.3140 99.5 99.5	3.9365 [3.7728]	104.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

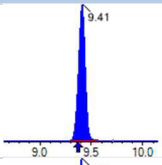
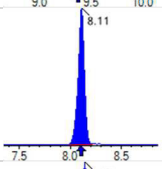
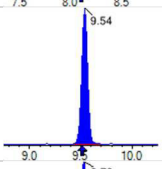
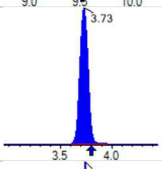
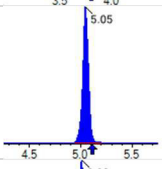
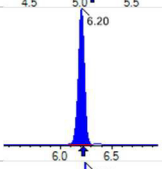
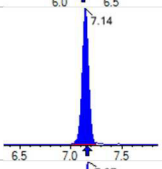
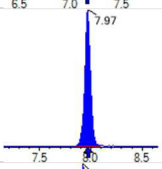
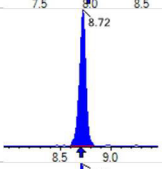
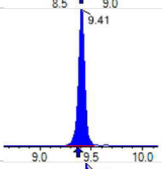
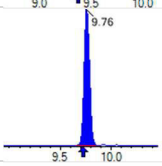
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 33053 (241.0 / 117.0) 55388	(4.55 , 0.90) (N/A , -0.07 , 0.1)	462.3 524.5	1.6757 102.2 102.2	8.3616 [8.0000]	104.5%			
5:3FTCA	(341.0 / 236.7) 240504 (341.0 / 217.0) 380811	(6.86 , 1.11) (N/A , -0.02 , -0.1)	505.8 525.4	1.5834 100.5 100.5	8.4360 [8.0000]	105.4%			
7:3FTCA	(441.0 / 317.0) 270458 (441.0 / 337.0) 228342	(8.70 , 1.40) (N/A , 0.02 , 0.2)	386.2 381.4	0.8443 100.8 100.8	7.5821 [8.0000]	94.8%			
PFEESA	(315.0 / 135.0) 555840 (315.0 / 83.0) 163848	(6.68 , 1.08) (N/A , -0.02 , -0.2)	908.1 583.9	0.2948 96.1 96.1	3.5824 [3.5698]	100.4%			
PFMPA	(229.0 / 85.0) 108229	(4.23 , 0.84) (N/A , -0.07 , 0.0)	1043.4	N/A 0.0 0.0	4.2388 [4.0000]	106.0%			
PFMBA	(279.0 / 85.0) 378453	(5.43 , 1.08) (N/A , -0.06 , 0.0)	1072.8	N/A 0.0 0.0	4.4289 [4.0000]	110.7%			
NFDHA	(201.0 / 85.0) 9685 (295.0 / 201.0) 80182	(6.08 , 0.98) (N/A , -0.03 , -0.1)	177.7 476.3	8.2791 125.7 125.7	3.2283 [4.0000]	80.7%			
13C3_PFBA_IIS	(216.0 / 172.0) 132728	(3.73 , N/A) (N/A , -0.07 , N/A)	604.4	N/A	1.0939 [1.0000]	109.4% { 104.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 193801	(6.20 , N/A) (N/A , -0.03 , N/A)	791.7	N/A	1.0620 [1.0000]	106.2% { 99.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 178666	(7.97 , N/A) (N/A , 0.01 , N/A)	514.6	N/A	1.0235 [1.0000]	102.3% { 101.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 148350	(8.72 , N/A) (N/A , 0.02 , N/A)	576.2	N/A	1.0917 [1.0000]	109.2% { 112.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

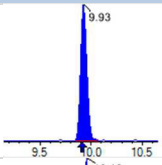
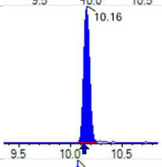
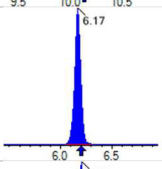
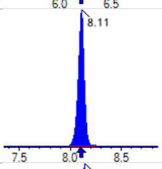
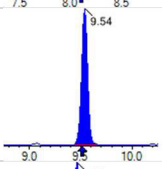
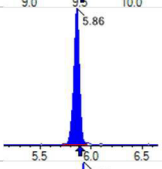
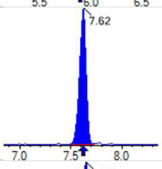
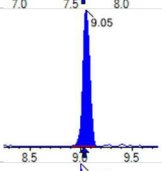
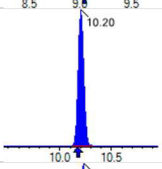
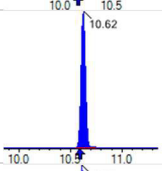
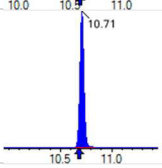
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 140731	(9.41 , N/A) (N/A , 0.03 , N/A)	607.4	N/A	1.0142 [1.0000]	101.4% { 99.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 317973	(8.11 , N/A) (N/A , 0.01 , N/A)	699.8	N/A	0.9852 [1.0000]	98.5% { 94.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 260978	(9.54 , N/A) (N/A , 0.03 , N/A)	472.4	N/A	1.0364 [1.0000]	103.6% { 94.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 825826	(3.73 , N/A) (N/A , -0.07 , N/A)	762.6	N/A	8.1624 [8.0000]	102.0% { 103.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 423866	(5.05 , N/A) (N/A , -0.06 , N/A)	782.6	N/A	3.9494 [4.0000]	98.7% { 99.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 321554	(6.20 , N/A) (N/A , -0.02 , N/A)	734.6	N/A	1.9688 [2.0000]	98.4% { 101.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 267032	(7.14 , N/A) (N/A , -0.01 , N/A)	685.9	N/A	1.8834 [2.0000]	94.2% { 92.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 260844	(7.97 , N/A) (N/A , 0.00 , N/A)	728.6	N/A	1.9040 [2.0000]	95.2% { 96.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 114240	(8.72 , N/A) (N/A , 0.02 , N/A)	417.2	N/A	0.9995 [1.0000]	100.0% { 106.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 146316	(9.41 , N/A) (N/A , 0.03 , N/A)	279.9	N/A	1.0841 [1.0000]	108.4% { 120.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 198071	(9.76 , N/A) (N/A , 0.03 , N/A)	536.8	N/A	1.0685 [1.0000]	106.9% { 106.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

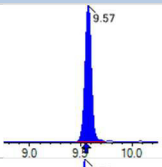
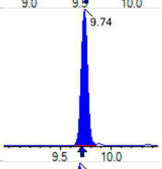
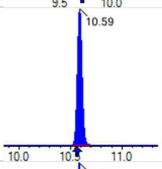
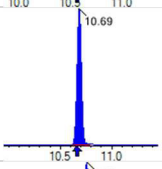
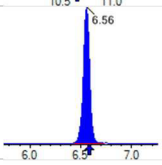
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 223471	(9.93 , N/A) (N/A , 0.02 , N/A)	410.5	N/A	0.9803 [1.0000]	98.0% { 91.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 157812	(10.16 , N/A) (N/A , 0.03 , N/A)	324.7	N/A	1.1025 [1.0000]	110.3% { 106.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 783023	(6.17 , N/A) (N/A , -0.04 , N/A)	950.5	N/A	2.1402 [2.0000]	107.0% { 101.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 411539	(8.11 , N/A) (N/A , 0.01 , N/A)	820.4	N/A	1.9987 [2.0000]	99.9% { 91.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 631472	(9.54 , N/A) (N/A , 0.03 , N/A)	405.0	N/A	1.9434 [2.0000]	97.2% { 98.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 93554	(5.86 , N/A) (N/A , -0.04 , N/A)	499.4	N/A	4.3751 [4.0000]	109.4% { 100.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 103518	(7.62 , N/A) (N/A , 0.00 , N/A)	386.5	N/A	3.9594 [4.0000]	99.0% { 93.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 93693	(9.05 , N/A) (N/A , 0.02 , N/A)	296.0	N/A	3.5919 [4.0000]	89.8% { 84.7% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1047288	(10.20 , N/A) (N/A , 0.03 , N/A)	857.5	N/A	2.1308 [2.0000]	106.5% { 101.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 249176	(10.62 , N/A) (N/A , 0.03 , N/A)	1028.5	N/A	1.9751 [2.0000]	98.8% { 106.5% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 215343	(10.71 , N/A) (N/A , 0.03 , N/A)	867.1	N/A	1.9673 [2.0000]	98.4% { 100.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B008.wiff- 0
Acquired: 2022/12/13 - 20:41

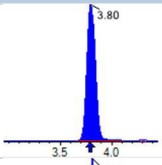
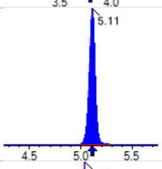
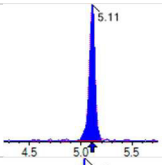
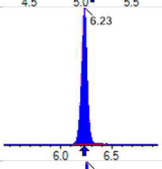
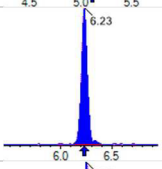
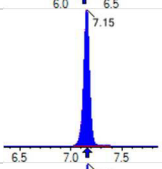
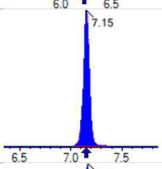
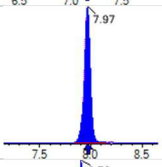
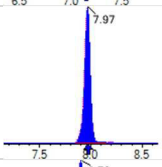
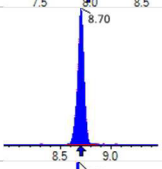
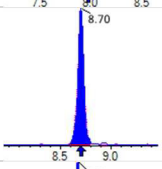
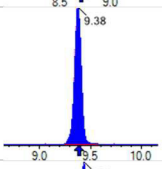
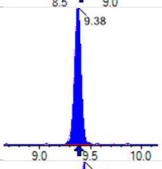
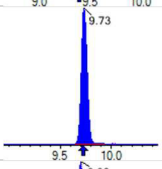
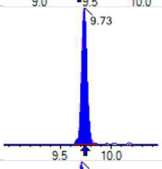
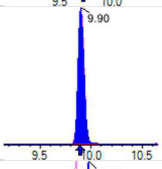
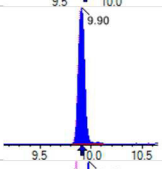
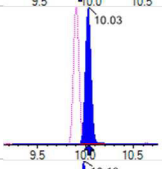
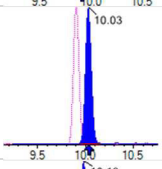
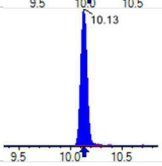
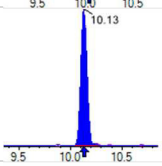
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 305589	(9.57 , N/A) (N/A , 0.03 , N/A)	480.9	N/A	3.9734 [4.0000]	99.3% { 96.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 295476	(9.74 , N/A) (N/A , 0.03 , N/A)	370.1	N/A	4.2460 [4.0000]	106.1% { 99.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 502830	(10.59 , N/A) (N/A , 0.03 , N/A)	951.3	N/A	20.7897 [20.0000]	103.9% { 110.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 262607	(10.69 , N/A) (N/A , 0.03 , N/A)	1646.4	N/A	21.6685 [20.0000]	108.3% { 109.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 769972	(6.56 , N/A) (N/A , -0.02 , N/A)	619.2	N/A	7.6963 [8.0000]	96.2% { 102.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

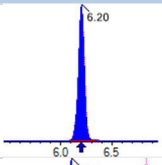
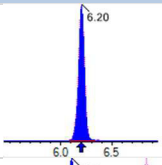
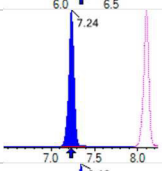
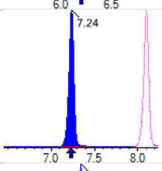
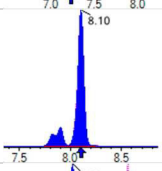
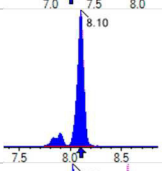
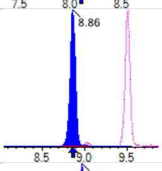
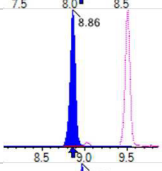
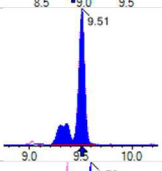
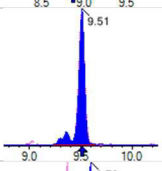
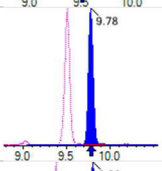
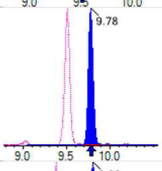
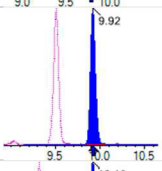
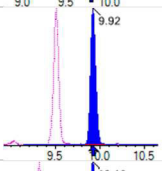
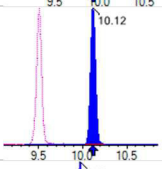
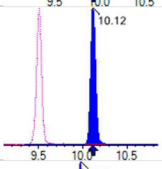
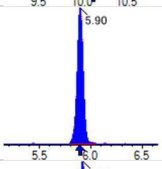
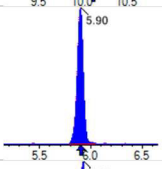
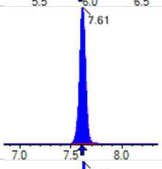
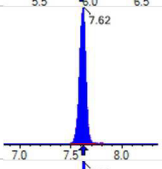
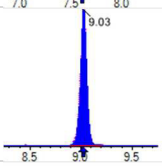
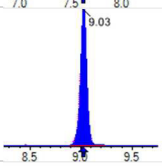
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 1451784	(3.80 , 1.00) (0.00 , N/A , 0.0)	57.0	N/A 0.0 0.0	20.7860 [20.0000]	103.9%			
PFPeA	(262.9 / 219.0) 942069 (262.9 / 69.0) 11831	(5.11 , 1.00) (0.00 , N/A , 0.0)	830.6 265.1	0.0126 100.0 100.0	9.9553 [10.0000]	99.6%			
PFHxA	(313.0 / 269.0) 717827 (313.0 / 119.0) 66458	(6.23 , 1.00) (0.01 , N/A , 0.1)	649.6 312.3	0.0926 100.0 100.0	5.1165 [5.0000]	102.3%			
PFHpA	(363.0 / 319.0) 677249 (363.0 / 169.0) 210739	(7.15 , 1.00) (0.00 , N/A , 0.1)	614.0 698.2	0.3112 100.0 100.0	5.0703 [5.0000]	101.4%			
PFOA	(413.0 / 369.0) 677870 (413.0 / 169.0) 227509	(7.97 , 1.00) (0.00 , N/A , 0.0)	649.5 813.0	0.3356 100.0 100.0	5.0029 [5.0000]	100.1%			
PFNA	(463.0 / 419.0) 540194 (463.0 / 169.0) 94807	(8.70 , 1.00) (0.00 , N/A , 0.1)	536.7 97.0	0.1755 100.0 100.0	5.4955 [5.0000]	109.9%			
PFDA	(513.0 / 469.0) 641896 (513.0 / 169.0) 64612	(9.38 , 1.00) (0.00 , N/A , 0.0)	540.7 425.7	0.1007 100.0 100.0	5.2169 [5.0000]	104.3%			
PFUnA	(563.0 / 519.0) 842655 (563.0 / 169.0) 77130	(9.73 , 1.00) (0.00 , N/A , -0.1)	701.7 256.2	0.0915 100.0 100.0	5.2291 [5.0000]	104.6%			
PFDoA	(613.0 / 569.0) 999990 (613.0 / 169.0) 128182	(9.90 , 1.00) (0.00 , N/A , -0.3)	784.8 320.7	0.1282 100.0 100.0	4.7241 [5.0000]	94.5%			
PFTrDA	(663.0 / 619.0) 802825 (663.0 / 169.0) 176312	(10.03 , 1.01) (N/A , 0.00 , -0.1)	1200.6 326.8	0.2196 100.0 100.0	4.6003 [5.0000]	92.0%			
PFTeDA	(713.0 / 669.0) 763866 (713.0 / 169.0) 142124	(10.13 , 1.00) (0.00 , N/A , 0.0)	715.6 493.4	0.1861 100.0 100.0	5.6164 [5.0000]	112.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

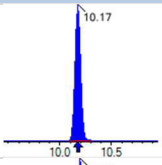
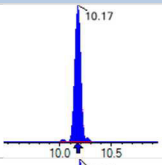
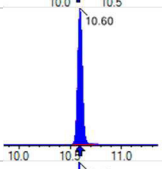
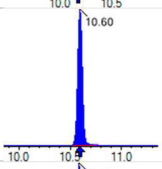
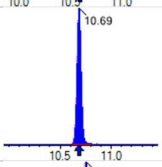
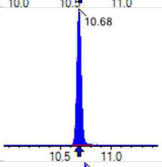
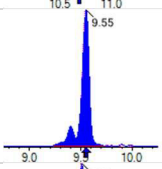
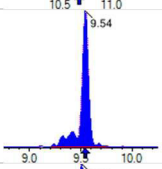
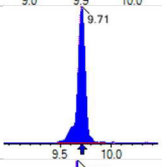
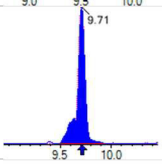
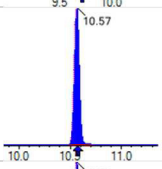
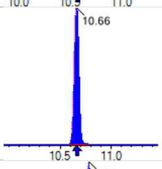
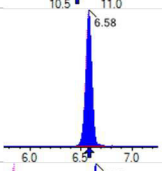
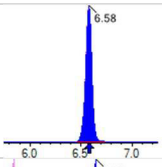
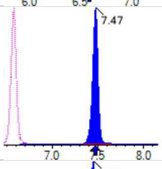
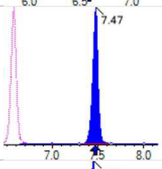
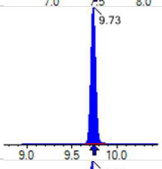
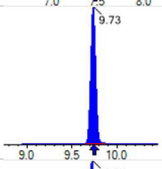
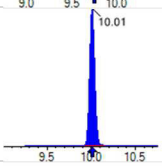
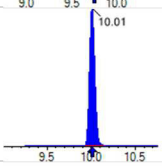
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 952464 (298.9 / 99.0) 686132	(6.20 , 1.00) (0.00 , N/A , -0.1)	750.9 758.0	0.7204 100.0 100.0	4.3675 [4.4237]	98.7%			
PFPeS	(349.0 / 80.0) 1815723 (349.0 / 99.0) 679968	(7.24 , 0.89) (N/A , 0.00 , 0.0)	677.6 813.0	0.3745 100.0 100.0	4.6068 [4.6919]	98.2%			
PFHxS	(399.0 / 80.0) 1603418 (399.0 / 99.0) 517182	(8.10 , 1.00) (0.00 , N/A , 0.1)	3494.2 4342.9	0.3225 100.0 100.0	4.4568 [4.5549]	97.8%			
PFHpS	(449.0 / 80.0) 1304754 (449.0 / 99.0) 400571	(8.86 , 0.93) (N/A , 0.00 , 0.0)	401.8 688.7	0.3070 100.0 100.0	4.5104 [4.7570]	94.8%			
PFOS	(499.0 / 80.0) 1736074 (499.0 / 99.0) 398421	(9.51 , 1.00) (0.00 , N/A , 0.0)	134.4 219.1	0.2295 100.0 100.0	4.9384 [4.6375]	106.5%			
PFNS	(549.0 / 80.0) 2036861 (549.0 / 99.0) 528136	(9.78 , 1.03) (N/A , 0.00 , 0.1)	997.0 467.0	0.2593 100.0 100.0	4.7025 [4.7994]	98.0%			
PFDS	(599.0 / 80.0) 2788383 (599.0 / 99.0) 627639	(9.92 , 1.04) (N/A , 0.00 , -0.1)	1395.7 794.1	0.2251 100.0 100.0	4.8968 [4.8155]	101.7%			
PFDoS	(698.9 / 80.0) 1481972 (698.9 / 99.0) 300054	(10.12 , 1.06) (N/A , 0.00 , 0.0)	968.3 505.0	0.2025 100.0 100.0	5.1448 [4.8478]	106.1%			
4:2FTS	(327.0 / 307.0) 1320032 (327.0 / 81.0) 801073	(5.90 , 1.00) (0.00 , N/A , -0.1)	1102.0 831.3	0.6069 100.0 100.0	17.3428 [18.6906]	92.8%			
6:2FTS	(427.0 / 407.0) 943886 (427.0 / 81.0) 613244	(7.61 , 1.00) (0.00 , N/A , -0.1)	945.7 770.7	0.6497 100.0 100.0	20.8171 [18.9808]	109.7%			
8:2FTS	(527.0 / 507.0) 758649 (527.0 / 81.0) 475612	(9.03 , 1.00) (0.00 , N/A , 0.0)	493.4 413.1	0.6269 100.0 100.0	19.2556 [19.1658]	100.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

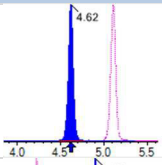
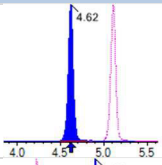
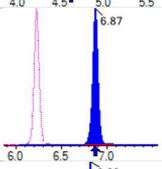
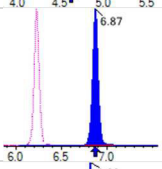
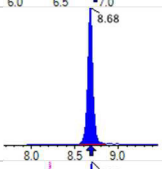
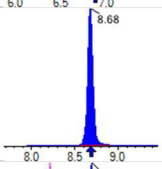
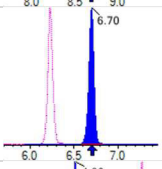
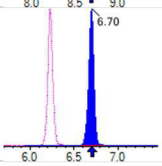
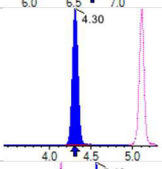
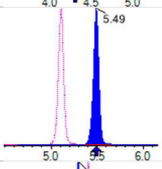
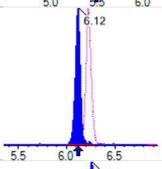
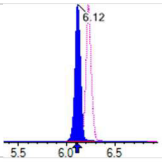
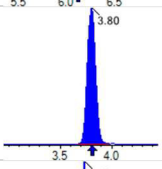
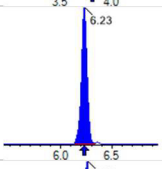
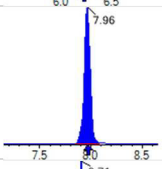
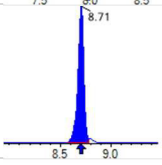
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 2357744 (498.0 / 478.0) 53675	(10.17 , 1.00) (0.00 , N/A , 0.0)	812.6 5518.1	0.0228 100.0 100.0	4.6447 [5.0000]	92.9%			
NMeFOSA	(511.9 / 219.0) 2010184 (511.9 / 169.0) 1282524	(10.60 , 1.00) (0.00 , N/A , 0.0)	1292.0 963.8	0.6380 100.0 100.0	20.6539 [20.0000]	103.3%			
NEtFOSA	(526.0 / 219.0) 1944163 (526.0 / 169.0) 2075464	(10.69 , 1.00) (0.00 , N/A , 0.0)	1416.4 1380.3	1.0675 100.0 100.0	19.6094 [20.0000]	98.0%			
NMeFOSAA	(570.0 / 419.0) 266213 (570.0 / 483.0) 152810	(9.55 , 1.00) (0.00 , N/A , 0.3)	377.0 709.6	0.5740 100.0 100.0	4.3576 [5.0000]	87.2%			
NEtFOSAA	(584.0 / 419.0) 293472 (584.0 / 526.0) 166369	(9.71 , 1.00) (0.00 , N/A , 0.1)	922.5 237323.0	0.5669 100.0 100.0	4.5514 [5.0000]	91.0%			
NMeFOSE	(616.1 / 59.0) 584126	(10.57 , 1.00) (0.01 , N/A , 0.0)	880.5	N/A 0.0 0.0	19.0837 [20.0000]	95.4%			
NEtFOSE	(630.0 / 59.0) 168571	(10.66 , 1.00) (0.01 , N/A , 0.0)	1330.5	N/A 0.0 0.0	20.7711 [20.0000]	103.9%			
HFPO-DA	(285.0 / 169.0) 628393 (285.0 / 185.0) 1652722	(6.58 , 1.00) (0.00 , N/A , 0.0)	743.4 920.7	2.6301 100.0 100.0	10.8519 [10.0000]	108.5%			
ADONA	(377.0 / 85.0) 2362618 (377.0 / 251.0) 278551	(7.47 , 1.14) (N/A , 0.00 , -0.1)	570.1 578.8	0.1179 100.0 100.0	9.5676 [9.4270]	101.5%			
9Cl-Pf3ONS	(531.0 / 351.0) 6695345 (533.0 / 353.0) 1941166	(9.73 , 1.48) (N/A , 0.00 , 0.0)	1062.1 870.7	0.2899 100.0 100.0	9.5624 [9.3325]	102.5%			
11Cl-PF3OUDS	(631.0 / 451.0) 4524705 (633.0 / 453.0) 1427390	(10.01 , 1.52) (N/A , 0.00 , 0.1)	1298.5 892.1	0.3155 100.0 100.0	10.0839 [9.4321]	106.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

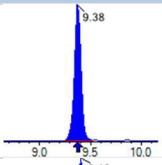
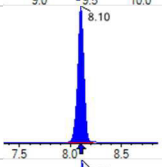
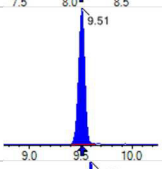
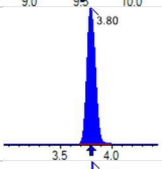
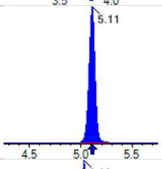
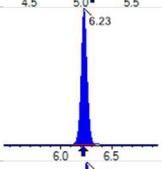
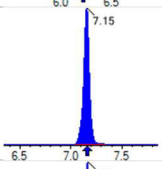
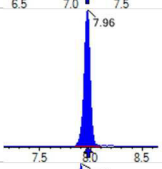
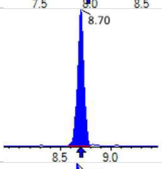
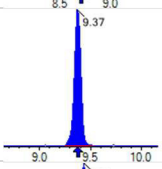
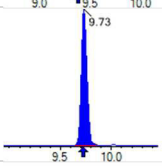
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 80109 (241.0 / 117.0) 131321	(4.62 , 0.90) (N/A , 0.00 , 0.1)	591.4 636.7	1.6393 100.0 100.0	20.1433 [20.0000]	100.7%			
5:3FTCA	(341.0 / 236.7) 600052 (341.0 / 217.0) 945748	(6.87 , 1.10) (N/A , 0.00 , 0.0)	592.3 683.0	1.5761 100.0 100.0	21.3749 [20.0000]	106.9%			
7:3FTCA	(441.0 / 317.0) 673505 (441.0 / 337.0) 564266	(8.68 , 1.39) (N/A , 0.00 , 0.0)	432.5 523.9	0.8378 100.0 100.0	19.1749 [20.0000]	95.9%			
PFEESA	(315.0 / 135.0) 1361458 (315.0 / 83.0) 417468	(6.70 , 1.08) (N/A , 0.00 , 0.1)	951.6 861.7	0.3066 100.0 100.0	8.9112 [8.9246]	99.9%			
PFMPA	(229.0 / 85.0) 245313	(4.30 , 0.84) (N/A , 0.00 , 0.0)	975.6	N/A 0.0 0.0	9.5500 [10.0000]	95.5%			
PFMBA	(279.0 / 85.0) 842570	(5.49 , 1.07) (N/A , 0.00 , 0.0)	982.5	N/A 0.0 0.0	9.8010 [10.0000]	98.0%			
NFDHA	(201.0 / 85.0) 30832 (295.0 / 201.0) 203076	(6.12 , 0.98) (N/A , 0.00 , 0.1)	467.9 756.9	6.5866 100.0 100.0	10.7140 [10.0000]	107.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 126651	(3.80 , N/A) (N/A , 0.00 , N/A)	763.9	N/A	1.0438 [1.0000]	104.4% { 100.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 195743	(6.23 , N/A) (N/A , 0.00 , N/A)	630.0	N/A	1.0727 [1.0000]	107.3% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 176199	(7.96 , N/A) (N/A , 0.00 , N/A)	745.3	N/A	1.0094 [1.0000]	100.9% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 131943	(8.71 , N/A) (N/A , 0.00 , N/A)	501.0	N/A	0.9710 [1.0000]	97.1% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

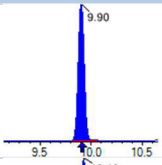
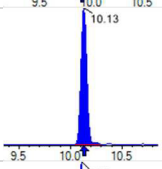
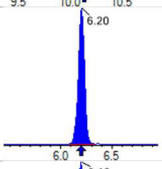
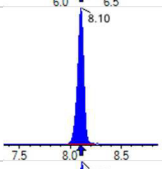
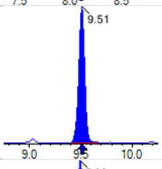
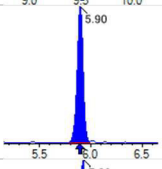
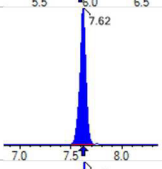
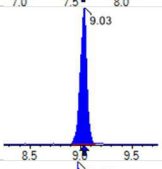
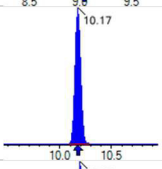
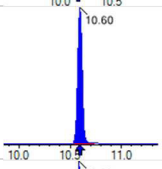
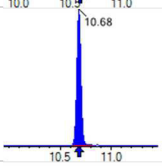
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 141296	(9.38 , N/A) (N/A , 0.00 , N/A)	430.2	N/A	1.0183 [1.0000]	101.8% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 335317	(8.10 , N/A) (N/A , 0.00 , N/A)	642.8	N/A	1.0390 [1.0000]	103.9% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 275762	(9.51 , N/A) (N/A , 0.00 , N/A)	510.8	N/A	1.0951 [1.0000]	109.5% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 795432	(3.80 , N/A) (N/A , 0.00 , N/A)	876.6	N/A	8.2393 [8.0000]	103.0% { 100.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 426431	(5.11 , N/A) (N/A , 0.00 , N/A)	776.3	N/A	3.9339 [4.0000]	98.3% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 316628	(6.23 , N/A) (N/A , 0.00 , N/A)	866.6	N/A	1.9194 [2.0000]	96.0% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 288649	(7.15 , N/A) (N/A , 0.00 , N/A)	667.7	N/A	2.0157 [2.0000]	100.8% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 271182	(7.96 , N/A) (N/A , 0.00 , N/A)	568.6	N/A	2.0071 [2.0000]	100.4% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 107823	(8.70 , N/A) (N/A , 0.00 , N/A)	378.0	N/A	1.0607 [1.0000]	106.1% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 121687	(9.37 , N/A) (N/A , 0.00 , N/A)	496.1	N/A	0.8980 [1.0000]	89.8% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 185762	(9.73 , N/A) (N/A , 0.00 , N/A)	533.5	N/A	0.9981 [1.0000]	99.8% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

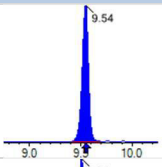
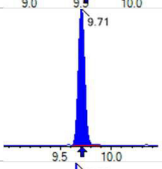
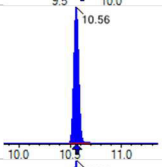
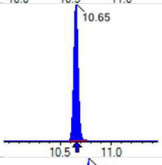
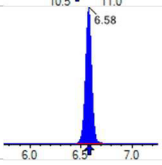
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 244436	(9.90 , N/A) (N/A , 0.00 , N/A)	623.8	N/A	1.0680 [1.0000]	106.8% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 148824	(10.13 , N/A) (N/A , 0.00 , N/A)	364.1	N/A	1.0356 [1.0000]	103.6% { 100.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 771923	(6.20 , N/A) (N/A , 0.00 , N/A)	601.6	N/A	2.0007 [2.0000]	100.0% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 448007	(8.10 , N/A) (N/A , 0.00 , N/A)	532.3	N/A	2.0633 [2.0000]	103.2% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 639399	(9.51 , N/A) (N/A , 0.00 , N/A)	339.4	N/A	1.8623 [2.0000]	93.1% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 93371	(5.90 , N/A) (N/A , 0.00 , N/A)	458.5	N/A	4.1407 [4.0000]	103.5% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 111272	(7.62 , N/A) (N/A , 0.00 , N/A)	603.4	N/A	4.0358 [4.0000]	100.9% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 110658	(9.03 , N/A) (N/A , 0.00 , N/A)	462.6	N/A	4.0228 [4.0000]	100.6% { 100.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1035004	(10.17 , N/A) (N/A , 0.00 , N/A)	660.5	N/A	1.9929 [2.0000]	99.6% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 233974	(10.60 , N/A) (N/A , 0.00 , N/A)	965.9	N/A	1.7551 [2.0000]	87.8% { 100.0% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 214512	(10.68 , N/A) (N/A , 0.00 , N/A)	1046.8	N/A	1.8547 [2.0000]	92.7% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B009.wiff- 0
Acquired: 2022/12/13 - 20:54

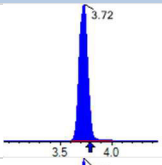
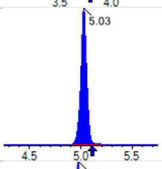
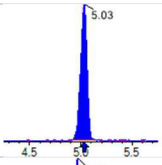
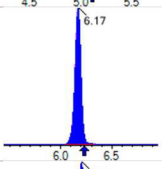
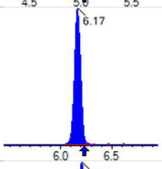
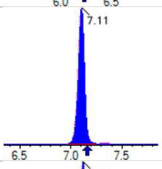
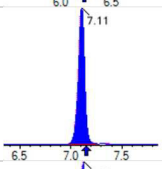
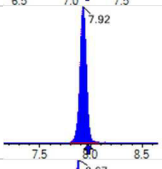
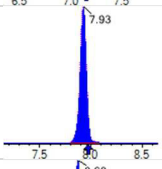
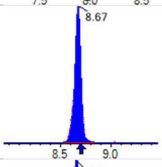
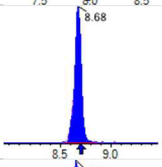
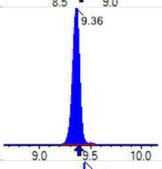
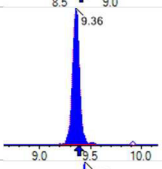
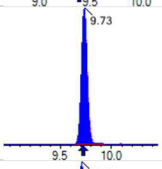
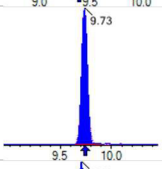
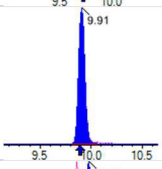
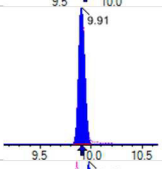
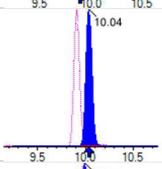
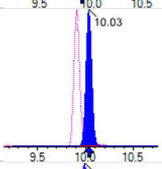
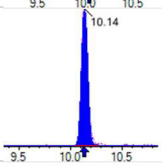
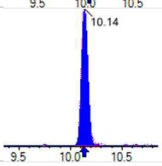
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 316119	(9.54 , N/A) (N/A , 0.00 , N/A)	357.6	N/A	3.8900 [4.0000]	97.2% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 296285	(9.71 , N/A) (N/A , 0.00 , N/A)	472.0	N/A	4.0293 [4.0000]	100.7% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 453746	(10.56 , N/A) (N/A , 0.00 , N/A)	1063.2	N/A	17.7545 [20.0000]	88.8% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 239914	(10.65 , N/A) (N/A , 0.00 , N/A)	1165.4	N/A	18.7347 [20.0000]	93.7% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 749093	(6.58 , N/A) (N/A , 0.00 , N/A)	929.1	N/A	7.4133 [8.0000]	92.7% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

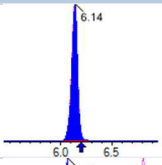
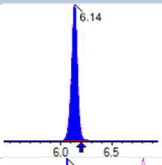
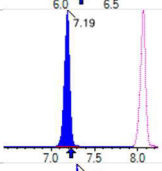
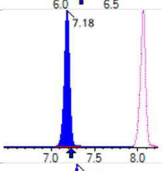
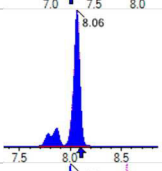
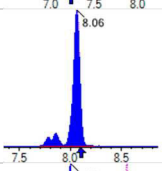
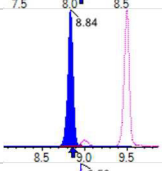
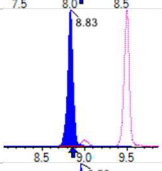
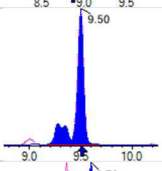
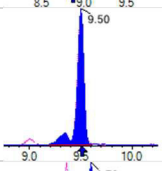
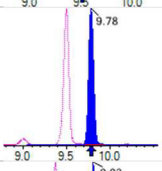
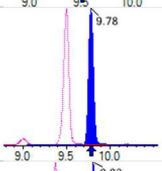
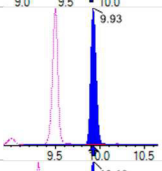
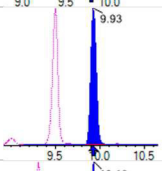
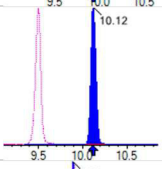
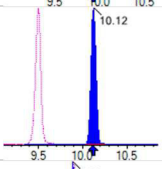
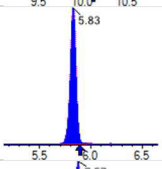
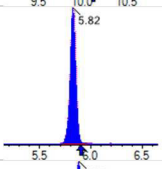
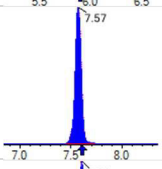
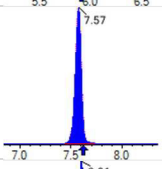
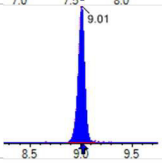
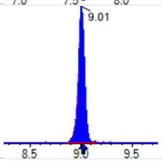
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 2337677	(3.72 , 1.00) (0.00 , N/A , 0.0)	55.7	N/A 0.0 0.0	40.9154 [40.0000]	102.3%			
PFPeA	(262.9 / 219.0) 1668692 (262.9 / 69.0) 19523	(5.03 , 1.00) (0.00 , N/A , -0.1)	669.4 371.1	0.0117 93.2 93.2	19.3173 [20.0000]	96.6%			
PFHxA	(313.0 / 269.0) 1188875 (313.0 / 119.0) 124144	(6.17 , 1.00) (0.00 , N/A , 0.3)	773.0 531.6	0.1044 112.8 112.8	8.8842 [10.0000]	88.8%			
PFHpA	(363.0 / 319.0) 1160429 (363.0 / 169.0) 345118	(7.11 , 1.00) (0.00 , N/A , -0.1)	752.3 516.0	0.2974 95.6 95.6	10.1137 [10.0000]	101.1%			
PFOA	(413.0 / 369.0) 1210538 (413.0 / 169.0) 370946	(7.92 , 1.00) (0.00 , N/A , -0.1)	807.1 677.3	0.3064 91.3 91.3	9.2348 [10.0000]	92.3%			
PFNA	(463.0 / 419.0) 857915 (463.0 / 169.0) 186842	(8.67 , 1.00) (0.00 , N/A , -0.1)	579.6 98.3	0.2178 124.1 124.1	8.8482 [10.0000]	88.5%			
PFDA	(513.0 / 469.0) 1229650 (513.0 / 169.0) 124733	(9.36 , 1.00) (0.00 , N/A , 0.1)	627.2 241.2	0.1014 100.8 100.8	8.9189 [10.0000]	89.2%			
PFUnA	(563.0 / 519.0) 1410409 (563.0 / 169.0) 132017	(9.73 , 1.00) (0.00 , N/A , -0.1)	973.1 349.9	0.0936 102.3 102.3	10.2072 [10.0000]	102.1%			
PFDoA	(613.0 / 569.0) 1764232 (613.0 / 169.0) 225054	(9.91 , 1.00) (0.00 , N/A , 0.0)	604.6 572.6	0.1276 99.5 99.5	10.2356 [10.0000]	102.4%			
PFTrDA	(663.0 / 619.0) 1531523 (663.0 / 169.0) 330928	(10.04 , 1.01) (N/A , 0.01 , 0.1)	787.5 531.0	0.2161 98.4 98.4	10.7776 [10.0000]	107.8%			
PFTeDA	(713.0 / 669.0) 1178307 (713.0 / 169.0) 243064	(10.14 , 1.00) (0.00 , N/A , -0.1)	590.0 559.6	0.2063 110.9 110.9	10.4557 [10.0000]	104.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

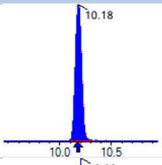
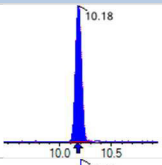
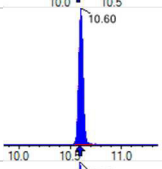
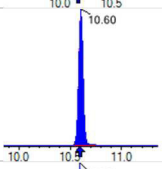
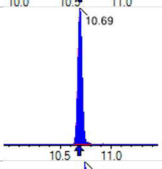
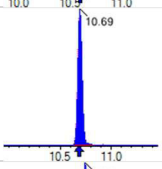
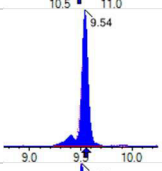
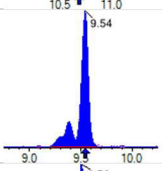
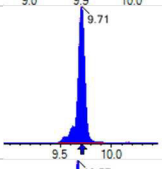
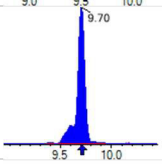
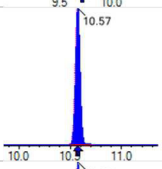
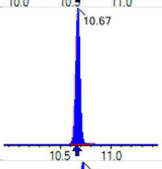
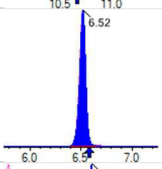
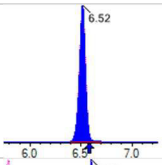
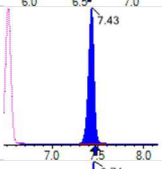
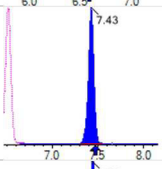
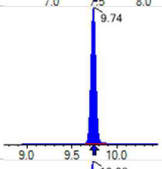
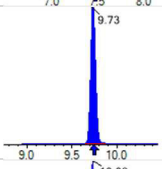
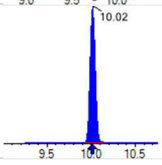
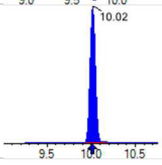
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 1675540 (298.9 / 99.0) 1260061	(6.14 , 1.00) (0.00 , N/A , 0.1)	947.8 979.8	0.7520 104.4 104.4	8.4994 [8.8473]	96.1%			
PFPeS	(349.0 / 80.0) 3144087 (349.0 / 99.0) 1141879	(7.19 , 0.89) (N/A , -0.05 , 0.1)	834.8 632.0	0.3632 97.0 97.0	8.3386 [9.3838]	88.9%			
PFHxS	(399.0 / 80.0) 2810264 (399.0 / 99.0) 928918	(8.06 , 1.00) (0.00 , N/A , 0.1)	3050.5 5508.4	0.3305 102.5 102.5	8.1653 [9.1098]	89.6%			
PFHpS	(449.0 / 80.0) 2456086 (449.0 / 99.0) 659707	(8.84 , 0.93) (N/A , -0.03 , 0.1)	558.6 411.7	0.2686 87.5 87.5	9.4958 [9.5141]	99.8%			
PFOS	(499.0 / 80.0) 3066551 (499.0 / 99.0) 616306	(9.50 , 1.00) (0.00 , N/A , -0.1)	148.9 177.2	0.2010 87.6 87.6	9.7559 [9.2749]	105.2%			
PFNS	(549.0 / 80.0) 3441021 (549.0 / 99.0) 957772	(9.78 , 1.03) (N/A , 0.00 , 0.1)	1114.9 839.0	0.2783 107.3 107.3	8.8850 [9.5989]	92.6%			
PFDS	(599.0 / 80.0) 4633325 (599.0 / 99.0) 1017900	(9.93 , 1.05) (N/A , 0.01 , -0.1)	1484.5 977.3	0.2197 97.6 97.6	9.1003 [9.6311]	94.5%			
PFDoS	(698.9 / 80.0) 2400355 (698.9 / 99.0) 577282	(10.12 , 1.07) (N/A , 0.00 , -0.1)	1207.9 1221.4	0.2405 118.8 118.8	9.3197 [9.6956]	96.1%			
4:2FTS	(327.0 / 307.0) 2387923 (327.0 / 81.0) 1413546	(5.83 , 1.00) (0.00 , N/A , 0.2)	862.8 721.8	0.5920 97.5 97.5	37.1103 [37.3811]	99.3%			
6:2FTS	(427.0 / 407.0) 1471616 (427.0 / 81.0) 1031892	(7.57 , 1.00) (0.00 , N/A , -0.1)	1087.7 1212.1	0.7012 107.9 107.9	34.1066 [37.9617]	89.8%			
8:2FTS	(527.0 / 507.0) 1384250 (527.0 / 81.0) 896542	(9.01 , 1.00) (0.00 , N/A , 0.0)	698.8 812.0	0.6477 103.3 103.3	40.4838 [38.3315]	105.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

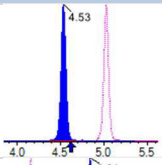
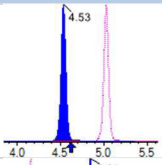
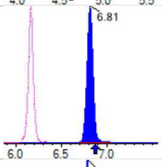
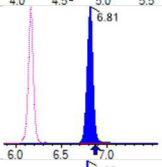
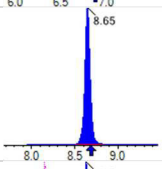
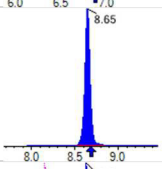
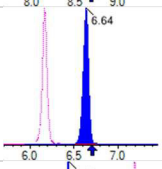
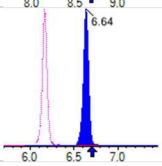
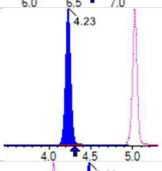
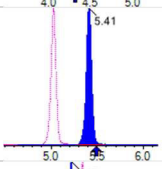
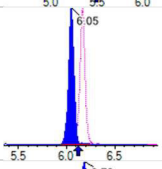
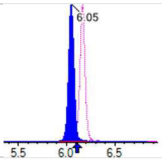
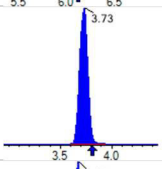
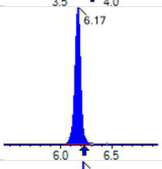
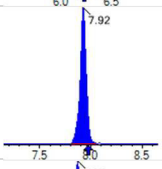
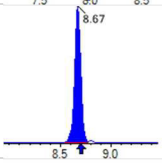
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 4045569 (498.0 / 478.0) 105573	(10.18 , 1.00) (0.00 , N/A , 0.0)	1114.7 407.5	0.0261 114.6 114.6	9.7275 [10.0000]	97.3%			
NMeFOSA	(511.9 / 219.0) 3917623 (511.9 / 169.0) 2563217	(10.60 , 1.00) (0.00 , N/A , 0.0)	1227.7 1882.0	0.6543 102.5 102.5	40.8457 [40.0000]	102.1%			
NEtFOSA	(526.0 / 219.0) 3435791 (526.0 / 169.0) 3555832	(10.69 , 1.00) (0.00 , N/A , 0.0)	1369.6 1351.9	1.0349 96.9 96.9	37.8293 [40.0000]	94.6%			
NMeFOSAA	(570.0 / 419.0) 545721 (570.0 / 483.0) 279754	(9.54 , 1.00) (0.00 , N/A , 0.0)	673.7 505.5	0.5126 89.3 89.3	10.8406 [10.0000]	108.4%			
NEtFOSAA	(584.0 / 419.0) 516508 (584.0 / 526.0) 331380	(9.71 , 1.00) (0.00 , N/A , 0.1)	1107.1 1922.9	0.6416 113.2 113.2	8.7043 [10.0000]	87.0%			
NMeFOSE	(616.1 / 59.0) 1069812	(10.57 , 1.00) (0.01 , N/A , 0.0)	883.3	N/A 0.0 0.0	37.9073 [40.0000]	94.8%			
NEtFOSE	(630.0 / 59.0) 245532	(10.67 , 1.00) (0.01 , N/A , 0.0)	922.8	N/A 0.0 0.0	40.5982 [40.0000]	101.5%			
HFPO-DA	(285.0 / 169.0) 1075122 (285.0 / 185.0) 3138717	(6.52 , 1.00) (0.00 , N/A , 0.2)	762.0 947.8	2.9194 111.0 111.0	18.9601 [20.0000]	94.8%			
ADONA	(377.0 / 85.0) 4306774 (377.0 / 251.0) 525258	(7.43 , 1.14) (N/A , -0.04 , 0.1)	742.3 796.9	0.1220 103.4 103.4	17.8103 [18.8540]	94.5%			
9Cl-Pf3ONS	(531.0 / 351.0) 12260687 (533.0 / 353.0) 3846868	(9.74 , 1.49) (N/A , 0.00 , 0.2)	877.4 665.7	0.3138 108.2 108.2	17.8821 [18.6651]	95.8%			
11Cl-PF3OUDS	(631.0 / 451.0) 8373522 (633.0 / 453.0) 2581634	(10.02 , 1.54) (N/A , 0.01 , -0.1)	949.2 994.5	0.3083 97.7 97.7	19.0569 [18.8642]	101.0%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

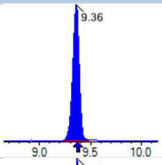
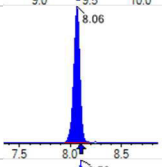
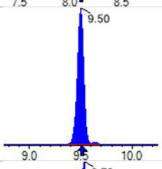
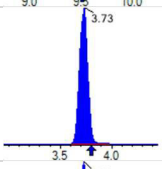
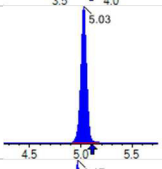
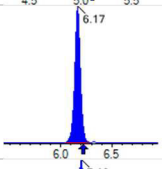
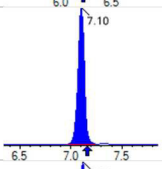
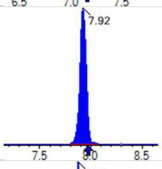
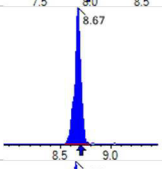
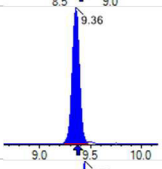
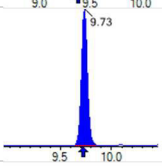
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 135780 (241.0 / 117.0) 239145	(4.53 , 0.90) (N/A , -0.08 , 0.0)	666.2 675.2	1.7613 107.4 107.4	37.4012 [40.0000]	93.5%			
5:3FTCA	(341.0 / 236.7) 999247 (341.0 / 217.0) 1603778	(6.81 , 1.11) (N/A , -0.06 , 0.0)	514.3 752.5	1.6050 101.8 101.8	37.3182 [40.0000]	93.3%			
7:3FTCA	(441.0 / 317.0) 1252819 (441.0 / 337.0) 1024151	(8.65 , 1.40) (N/A , -0.03 , 0.0)	643.1 633.8	0.8175 97.6 97.6	37.3949 [40.0000]	93.5%			
PFEESA	(315.0 / 135.0) 2568418 (315.0 / 83.0) 737772	(6.64 , 1.08) (N/A , -0.06 , 0.0)	915.5 802.9	0.2872 93.7 93.7	17.6250 [17.8492]	98.7%			
PFMPA	(229.0 / 85.0) 464712	(4.23 , 0.84) (N/A , -0.08 , 0.0)	998.3	N/A 0.0 0.0	19.8182 [20.0000]	99.1%			
PFMBA	(279.0 / 85.0) 1502382	(5.41 , 1.08) (N/A , -0.08 , 0.0)	947.1	N/A 0.0 0.0	19.1444 [20.0000]	95.7%			
NFDHA	(201.0 / 85.0) 51832 (295.0 / 201.0) 361133	(6.05 , 0.98) (N/A , -0.07 , 0.0)	496.7 706.1	6.9673 105.8 105.8	18.9782 [20.0000]	94.9%			
13C3_PFBA_IIS	(216.0 / 172.0) 115291	(3.73 , N/A) (N/A , -0.07 , N/A)	724.0	N/A	0.9502 [1.0000]	95.0% { 91.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 176615	(6.17 , N/A) (N/A , -0.06 , N/A)	716.3	N/A	0.9678 [1.0000]	96.8% { 90.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 166035	(7.92 , N/A) (N/A , -0.04 , N/A)	642.7	N/A	0.9511 [1.0000]	95.1% { 94.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 126360	(8.67 , N/A) (N/A , -0.03 , N/A)	544.8	N/A	0.9299 [1.0000]	93.0% { 95.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

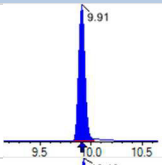
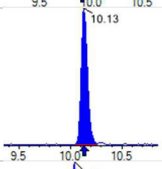
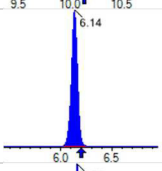
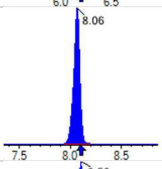
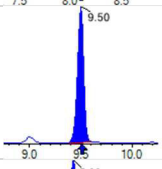
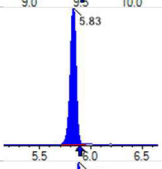
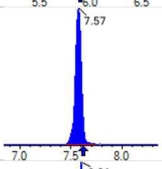
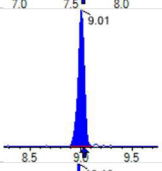
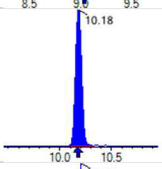
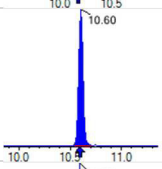
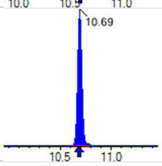
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 134817	(9.36 , N/A) (N/A , -0.02 , N/A)	423.3	N/A	0.9716 [1.0000]	97.2% { 95.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 343070	(8.06 , N/A) (N/A , -0.04 , N/A)	728.9	N/A	1.0630 [1.0000]	106.3% { 102.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 232276	(9.50 , N/A) (N/A , -0.01 , N/A)	548.9	N/A	0.9224 [1.0000]	92.2% { 84.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 650684	(3.73 , N/A) (N/A , -0.07 , N/A)	683.7	N/A	7.4041 [8.0000]	92.6% { 81.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 389269	(5.03 , N/A) (N/A , -0.08 , N/A)	788.5	N/A	3.9800 [4.0000]	99.5% { 91.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 302007	(6.17 , N/A) (N/A , -0.06 , N/A)	848.2	N/A	2.0290 [2.0000]	101.5% { 95.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 247951	(7.10 , N/A) (N/A , -0.05 , N/A)	432.7	N/A	1.9190 [2.0000]	96.0% { 85.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 262353	(7.92 , N/A) (N/A , -0.04 , N/A)	580.4	N/A	2.0607 [2.0000]	103.0% { 96.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 106355	(8.67 , N/A) (N/A , -0.03 , N/A)	485.6	N/A	1.0925 [1.0000]	109.2% { 98.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 136351	(9.36 , N/A) (N/A , -0.02 , N/A)	409.5	N/A	1.0545 [1.0000]	105.5% { 112.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 159285	(9.73 , N/A) (N/A , 0.00 , N/A)	301.9	N/A	0.8970 [1.0000]	89.7% { 85.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

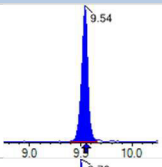
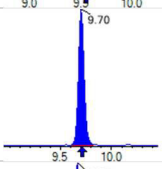
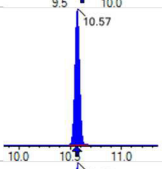
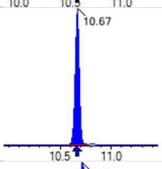
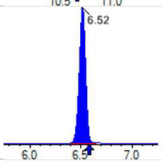
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 199035	(9.91 , N/A) (N/A , 0.00 , N/A)	291.2	N/A	0.9114 [1.0000]	91.1% { 81.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 123317	(10.13 , N/A) (N/A , 0.00 , N/A)	330.2	N/A	0.8993 [1.0000]	89.9% { 82.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 697796	(6.14 , N/A) (N/A , -0.07 , N/A)	951.6	N/A	1.7677 [2.0000]	88.4% { 90.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 428584	(8.06 , N/A) (N/A , -0.04 , N/A)	994.4	N/A	1.9293 [2.0000]	96.5% { 95.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 571705	(9.50 , N/A) (N/A , -0.01 , N/A)	260.8	N/A	1.9769 [2.0000]	98.8% { 89.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 78936	(5.83 , N/A) (N/A , -0.07 , N/A)	478.1	N/A	3.4214 [4.0000]	85.5% { 84.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 105887	(7.57 , N/A) (N/A , -0.05 , N/A)	691.7	N/A	3.7537 [4.0000]	93.8% { 95.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 96036	(9.01 , N/A) (N/A , -0.02 , N/A)	421.4	N/A	3.4124 [4.0000]	85.3% { 86.8% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 847968	(10.18 , N/A) (N/A , 0.01 , N/A)	719.4	N/A	1.9385 [2.0000]	96.9% { 81.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 230574	(10.60 , N/A) (N/A , 0.01 , N/A)	1171.6	N/A	2.0534 [2.0000]	102.7% { 98.5% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 196509	(10.69 , N/A) (N/A , 0.01 , N/A)	1161.0	N/A	2.0171 [2.0000]	100.9% { 91.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B010.wiff- 0
Acquired: 2022/12/13 - 21:07

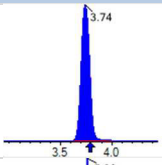
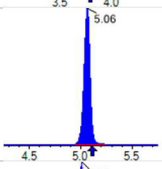
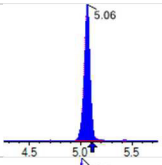
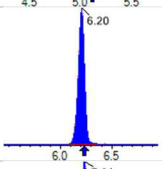
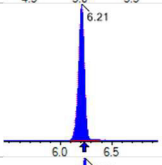
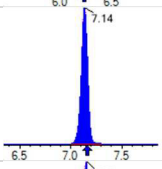
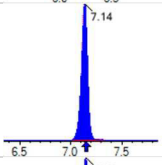
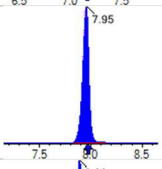
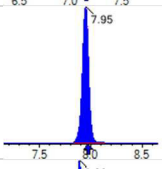
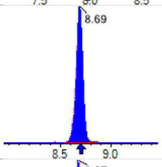
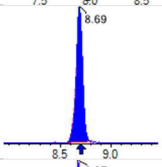
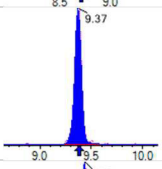
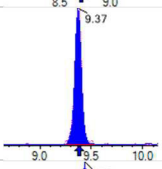
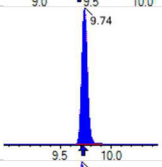
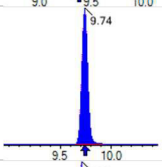
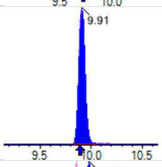
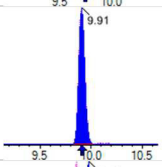
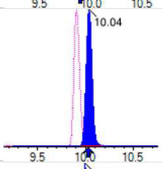
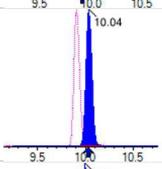
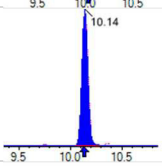
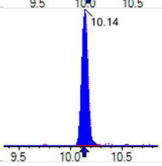
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 260484	(9.54 , N/A) (N/A , -0.01 , N/A)	386.9	N/A	3.8055 [4.0000]	95.1% { 82.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 272663	(9.70 , N/A) (N/A , 0.00 , N/A)	417.6	N/A	4.4023 [4.0000]	110.1% { 92.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 418364	(10.57 , N/A) (N/A , 0.01 , N/A)	1173.5	N/A	19.4348 [20.0000]	97.2% { 92.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 178785	(10.67 , N/A) (N/A , 0.01 , N/A)	1185.1	N/A	16.5750 [20.0000]	82.9% { 74.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 733546	(6.52 , N/A) (N/A , -0.06 , N/A)	866.9	N/A	8.0456 [8.0000]	100.6% { 97.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

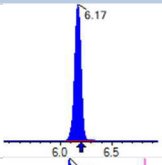
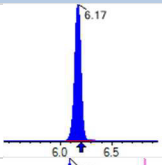
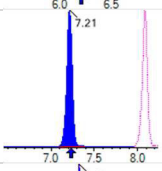
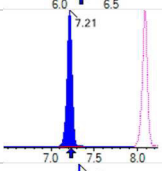
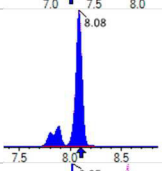
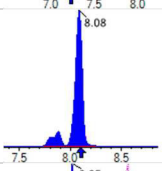
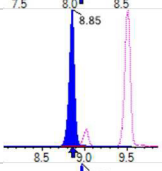
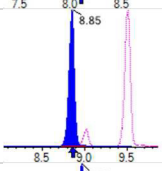
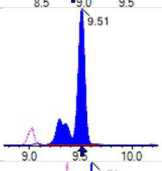
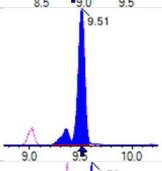
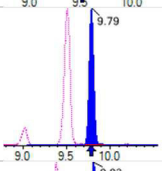
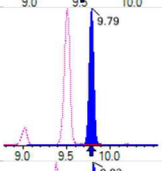
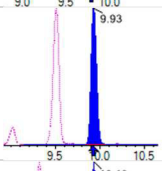
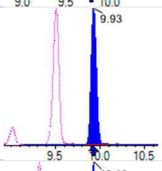
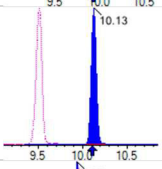
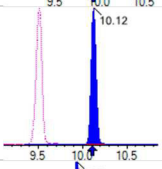
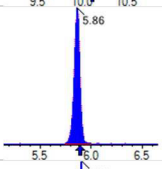
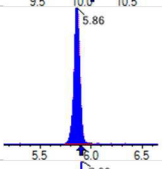
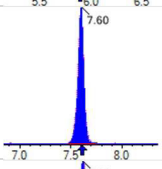
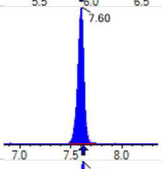
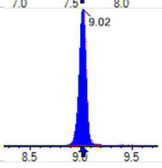
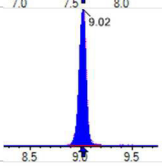
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 4688692	(3.74 , 1.00) (0.00 , N/A , 0.0)	67.7	N/A 0.0 0.0	77.9723 [80.0000]	97.5%			
PFPeA	(262.9 / 219.0) 3330388 (262.9 / 69.0) 38980	(5.06 , 1.00) (0.00 , N/A , -0.1)	804.8 523.8	0.0117 93.2 93.2	39.5875 [40.0000]	99.0%			
PFHxA	(313.0 / 269.0) 2377175 (313.0 / 119.0) 241227	(6.20 , 1.00) (0.00 , N/A , 0.0)	790.4 570.9	0.1015 109.6 109.6	19.0281 [20.0000]	95.1%			
PFHpA	(363.0 / 319.0) 2357674 (363.0 / 169.0) 748333	(7.14 , 1.00) (0.00 , N/A , -0.1)	675.2 652.6	0.3174 102.0 102.0	17.7184 [20.0000]	88.6%			
PFOA	(413.0 / 369.0) 2459526 (413.0 / 169.0) 826096	(7.95 , 1.00) (0.00 , N/A , 0.3)	628.7 788.4	0.3359 100.1 100.1	18.2471 [20.0000]	91.2%			
PFNA	(463.0 / 419.0) 1926887 (463.0 / 169.0) 412565	(8.69 , 1.00) (0.00 , N/A , 0.1)	634.4 132.5	0.2141 122.0 122.0	19.1543 [20.0000]	95.8%			
PFDA	(513.0 / 469.0) 2498676 (513.0 / 169.0) 235821	(9.37 , 1.00) (0.00 , N/A , 0.0)	446.1 344.2	0.0944 93.8 93.8	18.9370 [20.0000]	94.7%			
PFUnA	(563.0 / 519.0) 2929676 (563.0 / 169.0) 287215	(9.74 , 1.00) (0.00 , N/A , -0.2)	681.9 610.3	0.0980 107.1 107.1	18.9269 [20.0000]	94.6%			
PFDoA	(613.0 / 569.0) 3453314 (613.0 / 169.0) 494929	(9.91 , 1.00) (0.00 , N/A , 0.2)	849.9 599.3	0.1433 111.8 111.8	15.4888 [20.0000]	77.4%			
PFTrDA	(663.0 / 619.0) 2925245 (663.0 / 169.0) 645894	(10.04 , 1.01) (N/A , 0.01 , 0.1)	743.2 712.8	0.2208 100.5 100.5	15.9142 [20.0000]	79.6%			
PFTeDA	(713.0 / 669.0) 2499545 (713.0 / 169.0) 456882	(10.14 , 1.00) (0.00 , N/A , 0.0)	951.8 574.6	0.1828 98.2 98.2	19.9843 [20.0000]	99.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

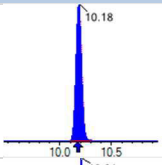
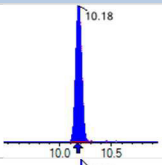
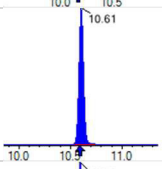
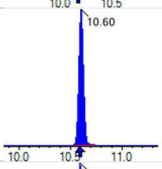
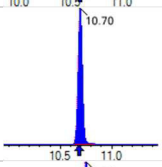
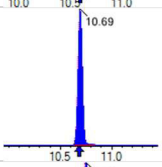
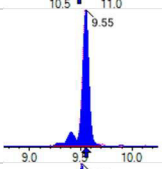
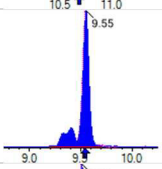
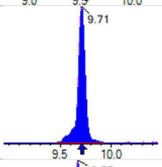
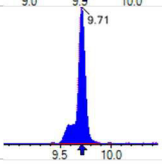
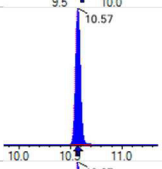
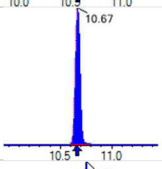
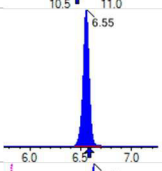
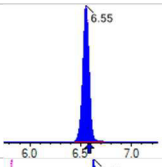
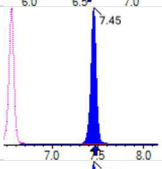
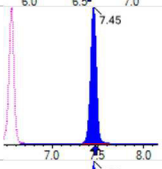
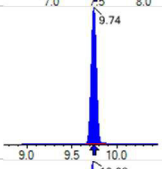
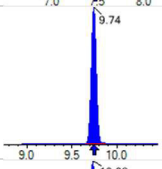
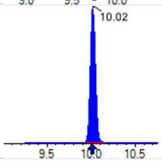
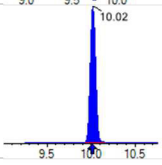
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 3757655 (298.9 / 99.0) 2441386	(6.17 , 1.00) (0.00 , N/A , 0.0)	602.3 832.3	0.6497 90.2 90.2	17.7624 [17.6947]	100.4%			
PFPeS	(349.0 / 80.0) 6568422 (349.0 / 99.0) 2617264	(7.21 , 0.89) (N/A , -0.02 , 0.0)	818.7 825.9	0.3985 106.4 106.4	17.9340 [18.7676]	95.6%			
PFHxS	(399.0 / 80.0) 5911094 (399.0 / 99.0) 1946919	(8.08 , 1.00) (0.00 , N/A , 0.0)	3565.9 3747.2	0.3294 102.1 102.1	17.6811 [18.2197]	97.0%			
PFHpS	(449.0 / 80.0) 5159277 (449.0 / 99.0) 1482433	(8.85 , 0.93) (N/A , -0.01 , 0.2)	592.5 492.7	0.2873 93.6 93.6	19.3240 [19.0281]	101.6%			
PFOS	(499.0 / 80.0) 5931805 (499.0 / 99.0) 1295228	(9.51 , 1.00) (0.00 , N/A , 0.0)	163.6 212.8	0.2184 95.1 95.1	18.2821 [18.5499]	98.6%			
PFNS	(549.0 / 80.0) 7772658 (549.0 / 99.0) 1843168	(9.79 , 1.03) (N/A , 0.01 , -0.1)	808.0 907.0	0.2371 91.5 91.5	19.4428 [19.1977]	101.3%			
PFDS	(599.0 / 80.0) 10158197 (599.0 / 99.0) 2355451	(9.93 , 1.04) (N/A , 0.01 , 0.0)	1102.2 819.7	0.2319 103.0 103.0	19.3285 [19.2621]	100.3%			
PFDoS	(698.9 / 80.0) 5031216 (698.9 / 99.0) 1167238	(10.13 , 1.06) (N/A , 0.01 , 0.2)	1431.9 1021.9	0.2320 114.6 114.6	18.9243 [19.3913]	97.6%			
4:2FTS	(327.0 / 307.0) 4897098 (327.0 / 81.0) 2772558	(5.86 , 1.00) (0.00 , N/A , 0.2)	829.2 946.7	0.5662 93.3 93.3	70.2511 [74.7622]	94.0%			
6:2FTS	(427.0 / 407.0) 2972329 (427.0 / 81.0) 2115496	(7.60 , 1.00) (0.00 , N/A , 0.0)	856.3 760.9	0.7117 109.5 109.5	68.4540 [75.9234]	90.2%			
8:2FTS	(527.0 / 507.0) 2782909 (527.0 / 81.0) 1808883	(9.02 , 1.00) (-0.01 , N/A , 0.0)	461.3 671.7	0.6500 103.7 103.7	65.4599 [76.6631]	85.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

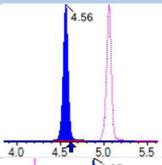
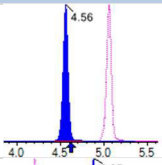
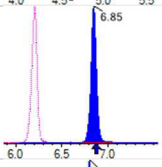
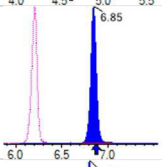
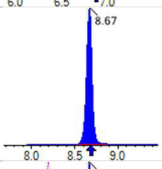
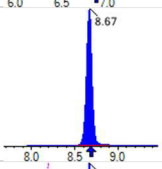
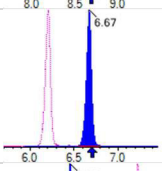
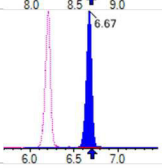
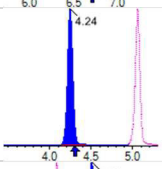
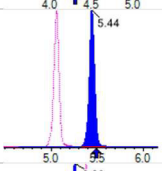
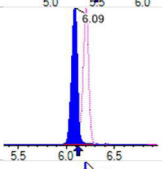
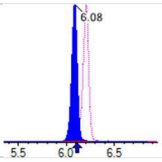
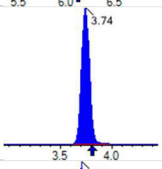
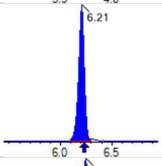
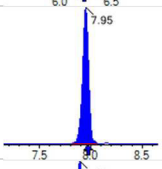
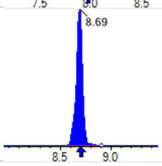
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 9069182 (498.0 / 478.0) 207569	(10.18 , 1.00) (0.00 , N/A , 0.0)	1135.9 345.4	0.0229 100.5 100.5	20.3605 [20.0000]	101.8%			
NMeFOSA	(511.9 / 219.0) 7740990 (511.9 / 169.0) 4998695	(10.61 , 1.00) (0.00 , N/A , 0.1)	1679.8 1340.5	0.6457 101.2 101.2	73.3469 [80.0000]	91.7%			
NEtFOSA	(526.0 / 219.0) 7877111 (526.0 / 169.0) 8539100	(10.70 , 1.00) (0.00 , N/A , 0.0)	1376.3 1523.9	1.0840 101.5 101.5	76.2663 [80.0000]	95.3%			
NMeFOSAA	(570.0 / 419.0) 1042920 (570.0 / 483.0) 540188	(9.55 , 1.00) (0.00 , N/A , -0.1)	585.0 419.3	0.5180 90.2 90.2	17.4314 [20.0000]	87.2%			
NEtFOSAA	(584.0 / 419.0) 1088468 (584.0 / 526.0) 663346	(9.71 , 1.00) (0.00 , N/A , -0.1)	848.7 1105.0	0.6094 107.5 107.5	18.9644 [20.0000]	94.8%			
NMeFOSE	(616.1 / 59.0) 2335585	(10.57 , 1.00) (0.01 , N/A , 0.0)	1246.3	N/A 0.0 0.0	71.7068 [80.0000]	89.6%			
NEtFOSE	(630.0 / 59.0) 578959	(10.67 , 1.00) (0.01 , N/A , 0.0)	1413.1	N/A 0.0 0.0	72.9246 [80.0000]	91.2%			
HFPO-DA	(285.0 / 169.0) 2133847 (285.0 / 185.0) 6265840	(6.55 , 1.00) (0.00 , N/A , 0.1)	927.0 919.7	2.9364 111.6 111.6	35.0205 [40.0000]	87.6%			
ADONA	(377.0 / 85.0) 8536816 (377.0 / 251.0) 1082323	(7.45 , 1.14) (N/A , -0.02 , 0.1)	1013.5 795.1	0.1268 107.5 107.5	32.8542 [37.7080]	87.1%			
9Cl-Pf3ONS	(531.0 / 351.0) 22576070 (533.0 / 353.0) 7647544	(9.74 , 1.49) (N/A , 0.01 , 0.0)	783.3 820.4	0.3387 116.8 116.8	30.6427 [37.3302]	82.1%			
11Cl-PF3OUDS	(631.0 / 451.0) 16063589 (633.0 / 453.0) 5234603	(10.02 , 1.53) (N/A , 0.01 , -0.1)	1165.9 983.2	0.3259 103.3 103.3	34.0222 [37.7283]	90.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

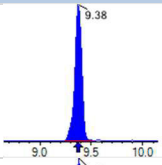
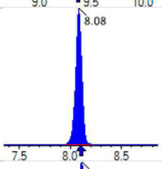
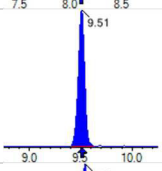
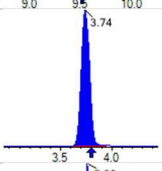
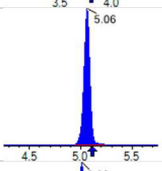
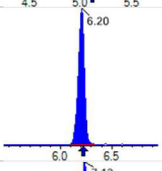
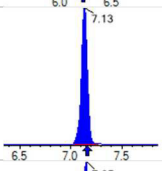
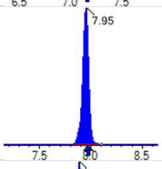
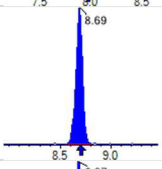
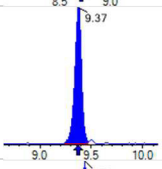
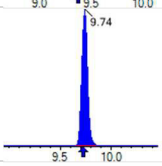
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 283938 (241.0 / 117.0) 495694	(4.56 , 0.90) (N/A , -0.06 , 0.0)	665.5 702.3	1.7458 106.5 106.5	80.3094 [80.0000]	100.4%			
5:3FTCA	(341.0 / 236.7) 1975368 (341.0 / 217.0) 3470127	(6.85 , 1.10) (N/A , -0.02 , 0.1)	677.0 551.1	1.7567 111.5 111.5	79.0218 [80.0000]	98.8%			
7:3FTCA	(441.0 / 317.0) 2568686 (441.0 / 337.0) 2111982	(8.67 , 1.40) (N/A , -0.01 , 0.1)	566.7 681.6	0.8222 98.1 98.1	82.1271 [80.0000]	102.7%			
PFEESA	(315.0 / 135.0) 4823528 (315.0 / 83.0) 1507646	(6.67 , 1.08) (N/A , -0.03 , 0.0)	1007.0 779.3	0.3126 101.9 101.9	35.4552 [35.6984]	99.3%			
PFMPA	(229.0 / 85.0) 871640	(4.24 , 0.84) (N/A , -0.06 , 0.0)	1146.3	N/A 0.0 0.0	38.1689 [40.0000]	95.4%			
PFMBA	(279.0 / 85.0) 3074062	(5.44 , 1.08) (N/A , -0.05 , 0.0)	1031.4	N/A 0.0 0.0	40.2223 [40.0000]	100.6%			
NFDHA	(201.0 / 85.0) 114145 (295.0 / 201.0) 780887	(6.09 , 0.98) (N/A , -0.03 , 0.1)	567.7 566.6	6.8412 103.9 103.9	44.9359 [40.0000]	112.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 114493	(3.74 , N/A) (N/A , -0.06 , N/A)	635.4	N/A	0.9436 [1.0000]	94.4% { 90.4% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 187062	(6.21 , N/A) (N/A , -0.03 , N/A)	592.0	N/A	1.0251 [1.0000]	102.5% { 95.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 186291	(7.95 , N/A) (N/A , -0.01 , N/A)	605.0	N/A	1.0672 [1.0000]	106.7% { 105.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 135981	(8.69 , N/A) (N/A , -0.01 , N/A)	247.7	N/A	1.0007 [1.0000]	100.1% { 103.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

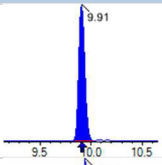
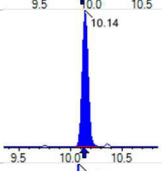
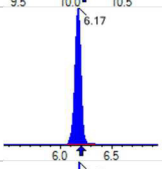
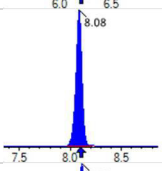
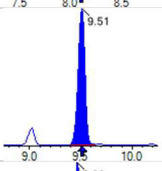
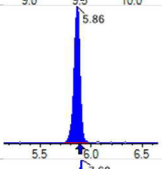
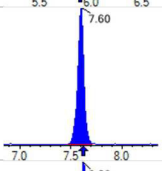
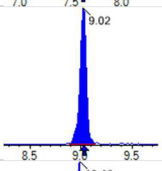
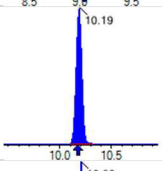
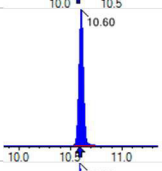
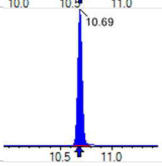
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 147905	(9.38 , N/A) (N/A , 0.00 , N/A)	431.1	N/A	1.0659 [1.0000]	106.6% { 104.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 311645	(8.08 , N/A) (N/A , -0.02 , N/A)	686.7	N/A	0.9656 [1.0000]	96.6% { 92.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 252700	(9.51 , N/A) (N/A , 0.00 , N/A)	337.3	N/A	1.0035 [1.0000]	100.3% { 91.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 684831	(3.74 , N/A) (N/A , -0.06 , N/A)	845.1	N/A	7.8470 [8.0000]	98.1% { 86.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 379103	(5.06 , N/A) (N/A , -0.05 , N/A)	741.2	N/A	3.6596 [4.0000]	91.5% { 88.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 281946	(6.20 , N/A) (N/A , -0.02 , N/A)	610.9	N/A	1.7885 [2.0000]	89.4% { 89.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 287552	(7.13 , N/A) (N/A , -0.02 , N/A)	873.7	N/A	2.1012 [2.0000]	105.1% { 99.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 269768	(7.95 , N/A) (N/A , -0.01 , N/A)	663.6	N/A	1.8885 [2.0000]	94.4% { 99.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 110346	(8.69 , N/A) (N/A , -0.01 , N/A)	452.2	N/A	1.0533 [1.0000]	105.3% { 102.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 130493	(9.37 , N/A) (N/A , 0.00 , N/A)	305.9	N/A	0.9199 [1.0000]	92.0% { 107.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 178434	(9.74 , N/A) (N/A , 0.01 , N/A)	464.0	N/A	0.9159 [1.0000]	91.6% { 96.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

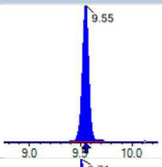
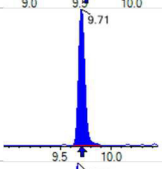
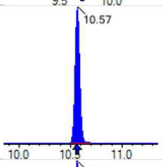
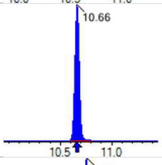
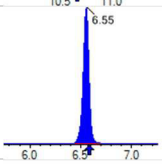
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 257456	(9.91 , N/A) (N/A , 0.01 , N/A)	391.4	N/A	1.0746 [1.0000]	107.5% { 105.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 136863	(10.14 , N/A) (N/A , 0.01 , N/A)	378.5	N/A	0.9098 [1.0000]	91.0% { 92.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 748814	(6.17 , N/A) (N/A , -0.03 , N/A)	711.0	N/A	2.0883 [2.0000]	104.4% { 97.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 416312	(8.08 , N/A) (N/A , -0.02 , N/A)	731.6	N/A	2.0630 [2.0000]	103.1% { 92.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 590136	(9.51 , N/A) (N/A , 0.00 , N/A)	170.7	N/A	1.8757 [2.0000]	93.8% { 92.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 85514	(5.86 , N/A) (N/A , -0.03 , N/A)	560.8	N/A	4.0803 [4.0000]	102.0% { 91.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 106557	(7.60 , N/A) (N/A , -0.02 , N/A)	569.5	N/A	4.1584 [4.0000]	104.0% { 95.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 119405	(9.02 , N/A) (N/A , 0.00 , N/A)	289.6	N/A	4.6705 [4.0000]	116.8% { 107.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 908197	(10.19 , N/A) (N/A , 0.01 , N/A)	1146.9	N/A	1.9084 [2.0000]	95.4% { 87.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 253716	(10.60 , N/A) (N/A , 0.01 , N/A)	1340.9	N/A	2.0769 [2.0000]	103.8% { 108.4% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 223470	(10.69 , N/A) (N/A , 0.01 , N/A)	1517.1	N/A	2.1085 [2.0000]	105.4% { 104.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B011.wiff- 0
Acquired: 2022/12/13 - 21:19

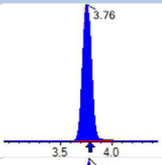
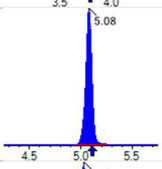
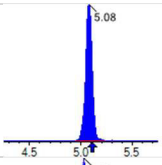
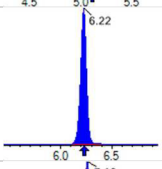
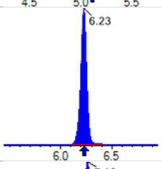
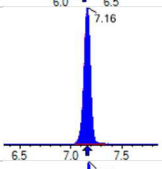
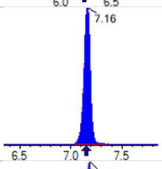
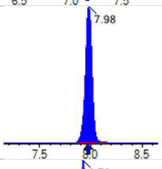
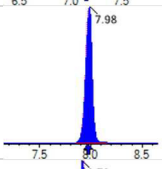
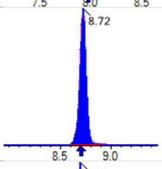
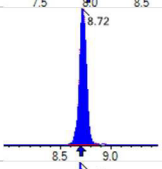
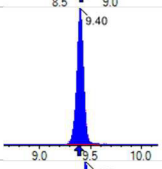
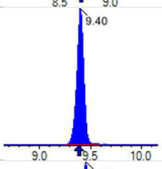
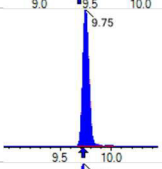
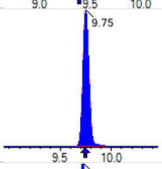
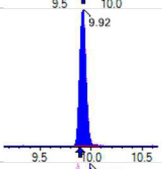
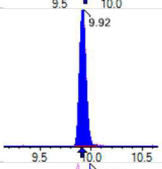
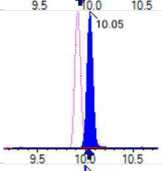
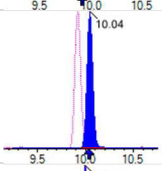
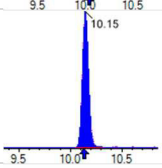
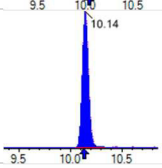
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 309586	(9.55 , N/A) (N/A , 0.00 , N/A)	419.4	N/A	4.1573 [4.0000]	103.9% { 97.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 263732	(9.71 , N/A) (N/A , 0.00 , N/A)	317.3	N/A	3.9139 [4.0000]	97.8% { 89.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 482842	(10.57 , N/A) (N/A , 0.01 , N/A)	1191.7	N/A	20.6172 [20.0000]	103.1% { 106.4% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 234695	(10.66 , N/A) (N/A , 0.01 , N/A)	1522.8	N/A	19.9997 [20.0000]	100.0% { 97.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 788228	(6.55 , N/A) (N/A , -0.02 , N/A)	964.4	N/A	8.1626 [8.0000]	102.0% { 105.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

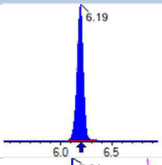
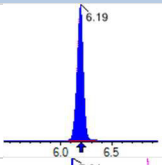
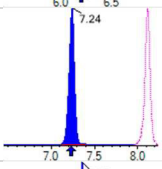
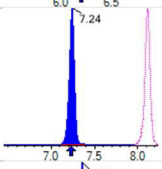
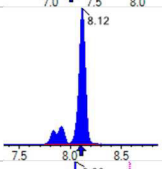
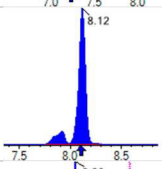
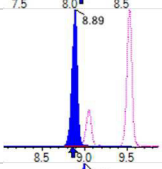
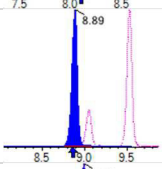
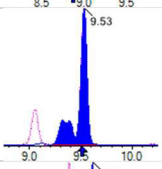
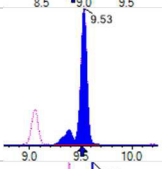
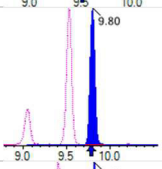
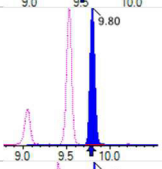
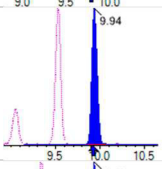
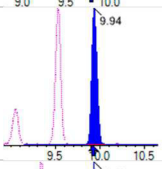
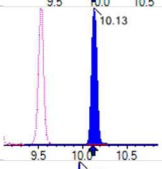
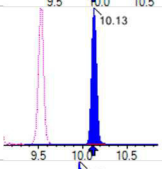
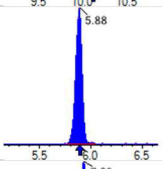
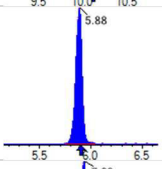
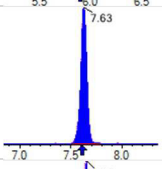
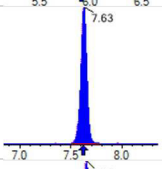
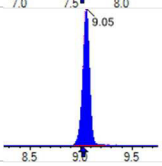
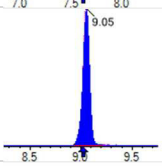
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 11470362	(3.76 , 1.00) (0.00 , N/A , 0.0)	66.5	N/A 0.0 0.0	202.6105 [200.0000]	101.3%			
PFPeA	(262.9 / 219.0) 8315567 (262.9 / 69.0) 91389	(5.08 , 1.00) (0.00 , N/A , 0.0)	723.9 723.5	0.0110 87.5 87.5	98.3425 [100.0000]	98.3%			
PFHxA	(313.0 / 269.0) 6767310 (313.0 / 119.0) 650518	(6.22 , 1.00) (0.00 , N/A , -0.1)	715.1 701.7	0.0961 103.8 103.8	47.6913 [50.0000]	95.4%			
PFHpA	(363.0 / 319.0) 5990106 (363.0 / 169.0) 1833124	(7.16 , 1.00) (0.00 , N/A , 0.0)	680.0 785.5	0.3060 98.3 98.3	51.2223 [50.0000]	102.4%			
PFOA	(413.0 / 369.0) 6041032 (413.0 / 169.0) 1990367	(7.98 , 1.00) (0.00 , N/A , -0.2)	703.7 824.1	0.3295 98.2 98.2	46.9755 [50.0000]	94.0%			
PFNA	(463.0 / 419.0) 4600977 (463.0 / 169.0) 910948	(8.72 , 1.00) (0.00 , N/A , 0.1)	760.0 104.5	0.1980 112.8 112.8	54.5440 [50.0000]	109.1%			
PFDA	(513.0 / 469.0) 6516009 (513.0 / 169.0) 654510	(9.40 , 1.00) (0.00 , N/A , -0.1)	529.6 381.3	0.1004 99.8 99.8	42.6385 [50.0000]	85.3%			
PFUnA	(563.0 / 519.0) 5799044 (563.0 / 169.0) 591475	(9.75 , 1.00) (0.00 , N/A , -0.1)	575.4 543.5	0.1020 111.4 111.4	48.1603 [50.0000]	96.3%			
PFDoA	(613.0 / 569.0) 8967714 (613.0 / 169.0) 982033	(9.92 , 1.00) (0.00 , N/A , 0.0)	1540.9 455.5	0.1095 85.4 85.4	51.5513 [50.0000]	103.1%			
PFTrDA	(663.0 / 619.0) 6376637 (663.0 / 169.0) 1321177	(10.05 , 1.01) (N/A , 0.02 , 0.0)	1119.7 848.5	0.2072 94.3 94.3	44.4621 [50.0000]	88.9%			
PFTeDA	(713.0 / 669.0) 5403890 (713.0 / 169.0) 1098990	(10.15 , 1.00) (0.00 , N/A , 0.1)	758.0 757.7	0.2034 109.3 109.3	46.1686 [50.0000]	92.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

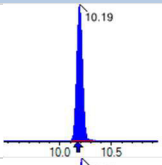
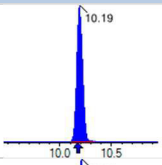
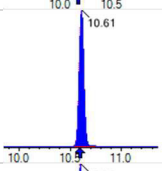
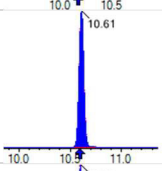
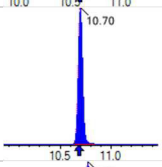
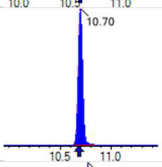
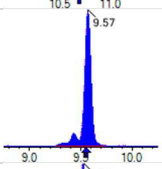
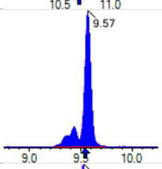
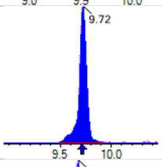
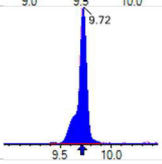
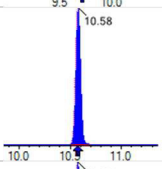
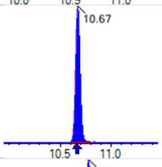
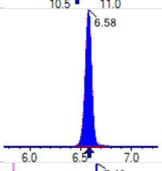
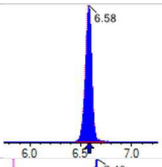
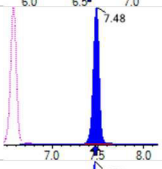
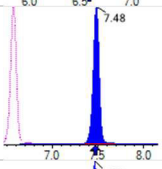
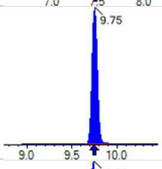
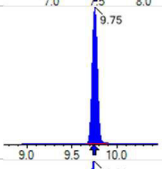
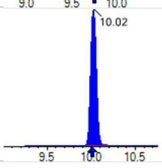
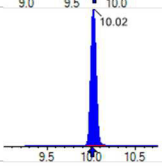
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 8541359 (298.9 / 99.0) 5686555	(6.19 , 1.00) (0.00 , N/A , 0.0)	934.8 766.6	0.6658 92.4 92.4	39.7256 [44.2367]	89.8%			
PFPeS	(349.0 / 80.0) 15452970 (349.0 / 99.0) 6191428	(7.24 , 0.89) (N/A , 0.00 , -0.1)	995.9 852.0	0.4007 107.0 107.0	43.9187 [46.9191]	93.6%			
PFHxS	(399.0 / 80.0) 13968968 (399.0 / 99.0) 4931016	(8.12 , 1.00) (0.00 , N/A , 0.0)	3622.1 4468.3	0.3530 109.4 109.4	43.4937 [45.5491]	95.5%			
PFHpS	(449.0 / 80.0) 13170515 (449.0 / 99.0) 3561220	(8.89 , 0.93) (N/A , 0.02 , 0.1)	692.2 785.4	0.2704 88.1 88.1	50.5623 [47.5703]	106.3%			
PFOS	(499.0 / 80.0) 14917353 (499.0 / 99.0) 3248846	(9.53 , 1.00) (0.00 , N/A , 0.1)	140.8 192.3	0.2178 94.9 94.9	47.1245 [46.3746]	101.6%			
PFNS	(549.0 / 80.0) 18226440 (549.0 / 99.0) 4379313	(9.80 , 1.03) (N/A , 0.02 , 0.1)	1740.0 1149.3	0.2403 92.7 92.7	46.7313 [47.9943]	97.4%			
PFDS	(599.0 / 80.0) 23076288 (599.0 / 99.0) 5772636	(9.94 , 1.04) (N/A , 0.02 , 0.1)	1279.5 795.7	0.2502 111.1 111.1	45.0053 [48.1553]	93.5%			
PFDoS	(698.9 / 80.0) 12186331 (698.9 / 99.0) 2982624	(10.13 , 1.06) (N/A , 0.01 , 0.2)	1053.8 1139.4	0.2448 120.9 120.9	46.9825 [48.4781]	96.9%			
4:2FTS	(327.0 / 307.0) 11644393 (327.0 / 81.0) 6324342	(5.88 , 1.00) (0.00 , N/A , -0.1)	786.8 696.4	0.5431 89.5 89.5	180.3049 [186.9055]	96.5%			
6:2FTS	(427.0 / 407.0) 7746824 (427.0 / 81.0) 5184764	(7.63 , 1.00) (0.00 , N/A , 0.0)	956.4 944.1	0.6693 103.0 103.0	168.3875 [189.8085]	88.7%			
8:2FTS	(527.0 / 507.0) 6761796 (527.0 / 81.0) 4489667	(9.05 , 1.00) (0.00 , N/A , 0.0)	525.4 582.4	0.6640 105.9 105.9	146.8970 [191.6577]	76.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

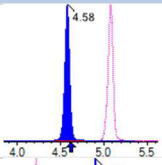
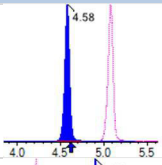
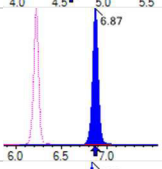
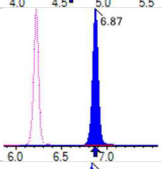
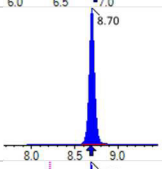
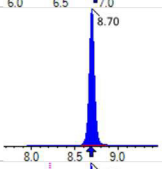
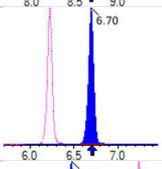
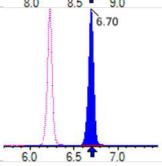
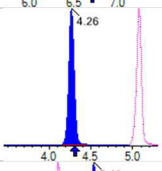
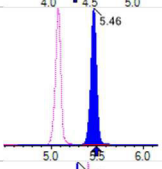
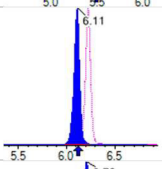
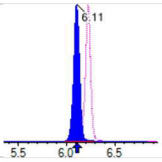
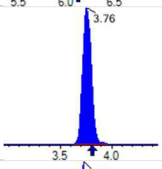
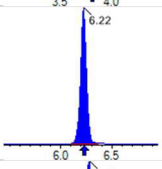
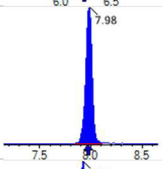
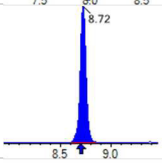
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 22092580 (498.0 / 478.0) 454296	(10.19 , 1.00) (0.00 , N/A , 0.0)	1270.8 861.7	0.0206 90.3 90.3	48.9364 [50.0000]	97.9%			
NMeFOSA	(511.9 / 219.0) 16072494 (511.9 / 169.0) 11262982	(10.61 , 1.00) (0.00 , N/A , 0.1)	1047.8 1240.4	0.7008 109.8 109.8	153.3555 [200.0000]	76.7%			
NEtFOSA	(526.0 / 219.0) 15694478 (526.0 / 169.0) 17174561	(10.70 , 1.00) (0.00 , N/A , 0.0)	1348.6 1422.8	1.0943 102.5 102.5	194.2715 [200.0000]	97.1%			
NMeFOSAA	(570.0 / 419.0) 3005200 (570.0 / 483.0) 1479949	(9.57 , 1.00) (0.00 , N/A , 0.1)	852.9 828.7	0.4925 85.8 85.8	50.8089 [50.0000]	101.6%			
NEtFOSAA	(584.0 / 419.0) 2418120 (584.0 / 526.0) 1556640	(9.72 , 1.00) (0.00 , N/A , -0.1)	1119.8 1415.0	0.6437 113.6 113.6	54.6864 [50.0000]	109.4%			
NMeFOSE	(616.1 / 59.0) 5492001	(10.58 , 1.00) (0.01 , N/A , 0.0)	1238.2	N/A 0.0 0.0	185.1525 [200.0000]	92.6%			
NEtFOSE	(630.0 / 59.0) 1261205	(10.67 , 1.00) (0.01 , N/A , 0.0)	1481.8	N/A 0.0 0.0	189.2354 [200.0000]	94.6%			
HFPO-DA	(285.0 / 169.0) 5516478 (285.0 / 185.0) 15676308	(6.58 , 1.00) (0.00 , N/A , -0.2)	960.9 806.1	2.8417 108.0 108.0	103.1225 [100.0000]	103.1%			
ADONA	(377.0 / 85.0) 20477129 (377.0 / 251.0) 2497987	(7.48 , 1.14) (N/A , 0.01 , 0.0)	948.9 878.0	0.1220 103.5 103.5	89.7628 [94.2700]	95.2%			
9Cl-Pf3ONS	(531.0 / 351.0) 47772779 (533.0 / 353.0) 16446558	(9.75 , 1.48) (N/A , 0.02 , -0.1)	678.9 678.9	0.3443 118.7 118.7	73.8570 [93.3254]	79.1%			
11Cl-PF3OUDS	(631.0 / 451.0) 33910798 (633.0 / 453.0) 12404060	(10.02 , 1.52) (N/A , 0.01 , 0.0)	943.3 1236.0	0.3658 116.0 116.0	81.8070 [94.3208]	86.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

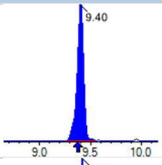
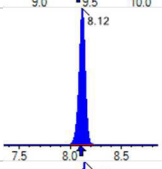
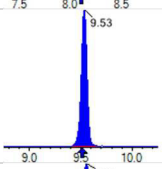
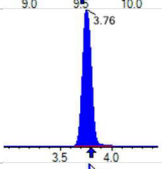
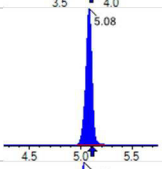
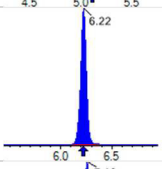
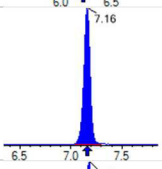
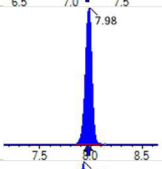
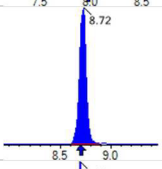
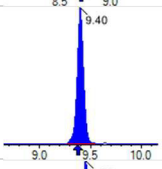
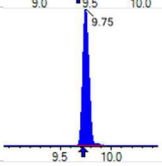
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 761112 (241.0 / 117.0) 1282860	(4.58 , 0.90) (N/A , -0.04 , 0.0)	705.6 770.3	1.6855 102.8 102.8	214.1791 [200.0000]	107.1%			
5:3FTCA	(341.0 / 236.7) 5575829 (341.0 / 217.0) 9233021	(6.87 , 1.10) (N/A , 0.00 , 0.0)	728.8 822.4	1.6559 105.1 105.1	196.3804 [200.0000]	98.2%			
7:3FTCA	(441.0 / 317.0) 6780790 (441.0 / 337.0) 5662108	(8.70 , 1.40) (N/A , 0.02 , 0.0)	704.1 693.4	0.8350 99.7 99.7	190.8734 [200.0000]	95.4%			
PFEESA	(315.0 / 135.0) 11558055 (315.0 / 83.0) 3704955	(6.70 , 1.08) (N/A , 0.00 , 0.0)	1032.2 1133.1	0.3206 104.5 104.5	74.7980 [89.2459]	83.8%			
PFMPA	(229.0 / 85.0) 2190560	(4.26 , 0.84) (N/A , -0.04 , 0.0)	1016.4	N/A 0.0 0.0	95.4364 [100.0000]	95.4%			
PFMBA	(279.0 / 85.0) 7139668	(5.46 , 1.08) (N/A , -0.03 , 0.0)	768.5	N/A 0.0 0.0	92.9435 [100.0000]	92.9%			
NFDHA	(201.0 / 85.0) 277330 (295.0 / 201.0) 1807093	(6.11 , 0.98) (N/A , -0.01 , 0.2)	795.4 744.3	6.5160 98.9 98.9	96.2635 [100.0000]	96.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 104543	(3.76 , N/A) (N/A , -0.04 , N/A)	645.3	N/A	0.8616 [1.0000]	86.2% { 82.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 181809	(6.22 , N/A) (N/A , -0.01 , N/A)	454.1	N/A	0.9963 [1.0000]	99.6% { 92.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 163041	(7.98 , N/A) (N/A , 0.02 , N/A)	640.6	N/A	0.9340 [1.0000]	93.4% { 92.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 139127	(8.72 , N/A) (N/A , 0.02 , N/A)	693.7	N/A	1.0238 [1.0000]	102.4% { 105.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

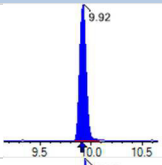
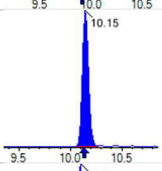
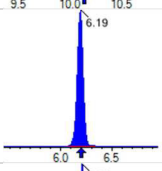
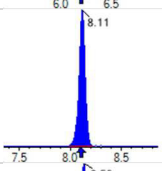
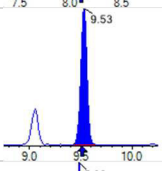
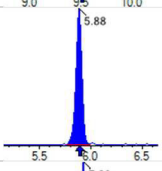
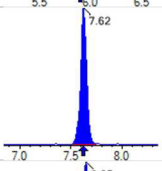
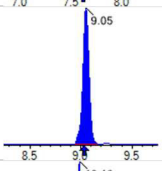
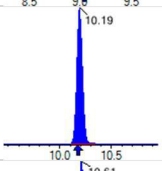
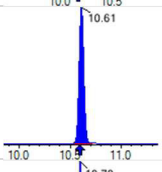
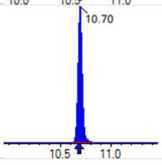
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 128290	(9.40 , N/A) (N/A , 0.03 , N/A)	340.7	N/A	0.9246 [1.0000]	92.5% { 90.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 321490	(8.12 , N/A) (N/A , 0.01 , N/A)	974.0	N/A	0.9961 [1.0000]	99.6% { 95.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 273939	(9.53 , N/A) (N/A , 0.02 , N/A)	312.2	N/A	1.0878 [1.0000]	108.8% { 99.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 644745	(3.76 , N/A) (N/A , -0.04 , N/A)	795.5	N/A	8.0907 [8.0000]	101.1% { 81.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 381041	(5.08 , N/A) (N/A , -0.03 , N/A)	724.3	N/A	3.7846 [4.0000]	94.6% { 89.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 320241	(6.22 , N/A) (N/A , 0.00 , N/A)	776.8	N/A	2.0901 [2.0000]	104.5% { 101.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 252716	(7.16 , N/A) (N/A , 0.00 , N/A)	542.6	N/A	1.9000 [2.0000]	95.0% { 87.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 257379	(7.98 , N/A) (N/A , 0.02 , N/A)	708.6	N/A	2.0587 [2.0000]	102.9% { 94.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 92528	(8.72 , N/A) (N/A , 0.02 , N/A)	251.4	N/A	0.8632 [1.0000]	86.3% { 85.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 151137	(9.40 , N/A) (N/A , 0.03 , N/A)	419.3	N/A	1.2284 [1.0000]	122.8% { 124.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 138805	(9.75 , N/A) (N/A , 0.02 , N/A)	316.1	N/A	0.8214 [1.0000]	82.1% { 74.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

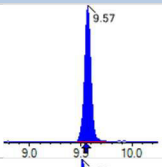
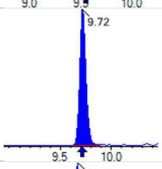
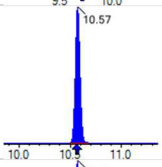
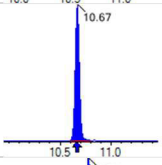
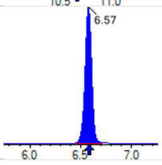
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 200876	(9.92 , N/A) (N/A , 0.02 , N/A)	471.6	N/A	0.9666 [1.0000]	96.7% { 82.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 128078	(10.15 , N/A) (N/A , 0.02 , N/A)	316.1	N/A	0.9816 [1.0000]	98.2% { 86.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 761055	(6.19 , N/A) (N/A , -0.01 , N/A)	1156.7	N/A	2.0574 [2.0000]	102.9% { 98.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 399943	(8.11 , N/A) (N/A , 0.01 , N/A)	910.5	N/A	1.9212 [2.0000]	96.1% { 89.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 575753	(9.53 , N/A) (N/A , 0.02 , N/A)	125.7	N/A	1.6881 [2.0000]	84.4% { 90.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 79224	(5.88 , N/A) (N/A , -0.01 , N/A)	509.6	N/A	3.6644 [4.0000]	91.6% { 84.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 112902	(7.62 , N/A) (N/A , 0.01 , N/A)	537.4	N/A	4.2710 [4.0000]	106.8% { 101.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 129285	(9.05 , N/A) (N/A , 0.02 , N/A)	546.8	N/A	4.9021 [4.0000]	122.6% { 116.8% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 920482	(10.19 , N/A) (N/A , 0.02 , N/A)	997.6	N/A	1.7842 [2.0000]	89.2% { 88.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 251952	(10.61 , N/A) (N/A , 0.01 , N/A)	739.2	N/A	1.9026 [2.0000]	95.1% { 107.7% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 174792	(10.70 , N/A) (N/A , 0.01 , N/A)	753.0	N/A	1.5213 [2.0000]	76.1% { 81.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B012.wiff- 0
Acquired: 2022/12/13 - 21:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 306054	(9.57 , N/A) (N/A , 0.02 , N/A)	360.1	N/A	3.7912 [4.0000]	94.8% { 96.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 203181	(9.72 , N/A) (N/A , 0.01 , N/A)	228.8	N/A	2.7816 [4.0000]	69.5% { 68.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 439714	(10.57 , N/A) (N/A , 0.01 , N/A)	1053.2	N/A	17.3200 [20.0000]	86.6% { 96.9% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 197021	(10.67 , N/A) (N/A , 0.01 , N/A)	1107.7	N/A	15.4877 [20.0000]	77.4% { 82.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 692021	(6.57 , N/A) (N/A , 0.00 , N/A)	808.8	N/A	7.3734 [8.0000]	92.2% { 92.4% }			

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2251013
Laboratory ID: SB03823-SCV1
Sequence: SB03823
Standard ID: 22L0185

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	7.82	-2.3	30.00
PFPEA	4.00	3.88	-3.1	30.00
PFHXA	2.00	2.21	10.5	30.00
PFHPA	2.00	2.16	8.0	30.00
PFOA	2.00	1.86	-6.8	30.00
PFNA	2.00	2.03	1.7	30.00
PFDA	2.00	1.71	-14.7	30.00
PFUnA	2.00	1.95	-2.3	30.00
PFDOA	2.00	1.87	-6.5	30.00
PFTRDA	2.00	2.19	9.5	30.00
PFTEDA	2.00	1.81	-9.6	30.00
PFBS	1.77	1.87	5.5	30.00
PFPES	1.88	1.86	-1.0	30.00
PFHXS	1.83	1.73	-5.7	30.00
PFHPS	1.91	1.87	-2.2	30.00
PFOS	1.86	1.91	2.6	30.00
PFNS	1.92	1.86	-3.1	30.00
PFDS	1.93	1.92	-0.5	30.00
PFDOS	1.94	2.25	15.8	30.00
4:2FTS	7.50	7.45	-0.7	30.00
6:2FTS	7.60	7.97	4.9	30.00
8:2FTS	7.68	7.58	-1.3	30.00
PFOSA	2.00	2.21	10.5	30.00
NMeFOSA	8.00	8.10	1.3	30.00
NEtFOSA	8.00	7.53	-5.9	30.00
NMeFOSAA	2.00	2.14	7.2	30.00
NEtFOSAA	2.00	2.12	6.1	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2251013
Laboratory ID: SB03823-SCV1
Sequence: SB03823
Standard ID: 22L0185

NMeFOSE	8.00	7.36	-8.0	30.00
NEtFOSE	8.00	7.40	-7.5	30.00
HFPO-DA	4.00	3.65	-8.7	30.00
ADONA	3.78	3.48	-7.9	30.00
PFEESA	3.56	4.04	13.4	30.00
PFMPA	4.00	4.20	4.9	30.00
PFMBA	4.00	3.90	-2.4	30.00
NFDHA	4.00	3.93	-1.8	30.00
9CL-PF3ONS	3.74	3.37	-9.8	30.00
11CL-PF3OUDS	3.78	3.50	-7.4	30.00
3:3FTCA	8.00	7.97	-0.4	30.00
5:3FTCA	8.00	8.62	7.7	30.00
7:3FTCA	8.00	7.98	-0.3	30.00
13C4-PFBA	8.00	8.29	3.6	30.00
13C5-PFPEA	4.00	3.74	-6.6	30.00
13C5-PFHXA	2.00	1.67	-16.3	30.00
13C4-PFHPA	2.00	1.75	-12.4	30.00
13C8-PFOA	2.00	1.99	-0.4	30.00
13C9-PFNA	1.00	1.01	1.4	30.00
13C6-PFDA	1.00	1.04	4.1	30.00
13C7-PFUnA	1.00	1.07	6.7	30.00
13C2-PFDOA	1.00	1.07	6.6	30.00
13C2-PFTEDA	1.00	1.09	8.8	30.00
13C3-PFBS	2.00	2.20	10.1	30.00
13C3-PFHXS	2.00	2.21	10.5	30.00
13C8-PFOS	2.00	1.85	-7.4	30.00
13C2-4:2FTS	4.00	4.60	15.0	30.00
13C2-6:2FTS	4.00	4.15	3.7	30.00
13C2-8:2FTS	4.00	4.27	6.7	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2251013
Laboratory ID: SB03823-SCV1
Sequence: SB03823
Standard ID: 22L0185

13C8-PFOSA	2.00	1.96	-2.2	30.00
D5-NETFOSA	2.00	1.96	-1.8	30.00
D3-NMEFOSA	2.00	1.91	-4.5	30.00
D3-NMEFOSAA	4.00	3.65	-8.7	30.00
D5-NETFOSAA	4.00	3.81	-4.9	30.00
D7-NMEFOSE	20.0	20.2	1.2	30.00
D9-NETFOSE	20.0	20.1	0.4	30.00
13C3-HFPO-DA	8.00	8.34	4.2	30.00

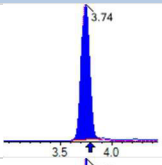
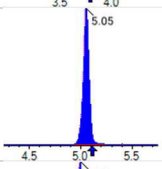
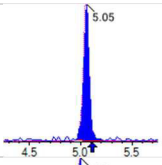
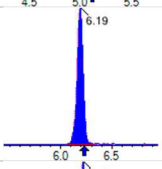
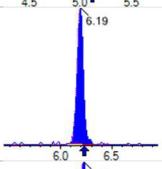
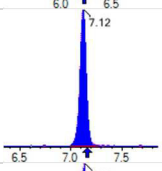
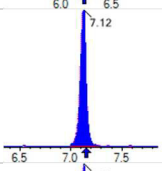
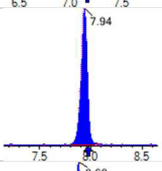
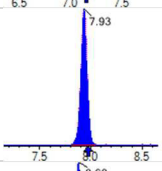
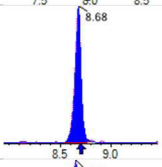
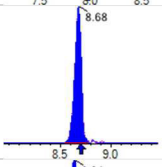
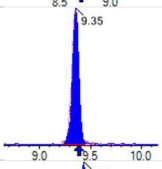
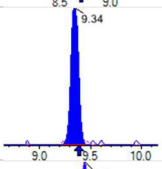
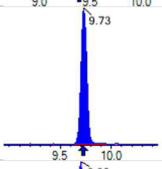
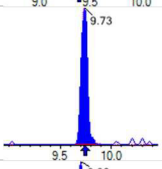
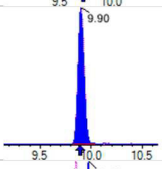
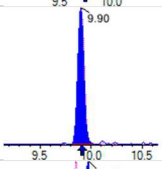
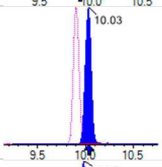
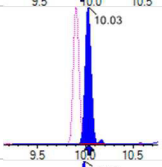
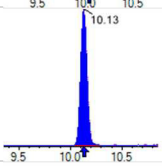
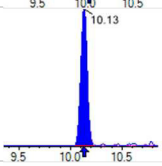
* Values outside of QC limits

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

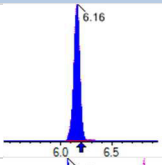
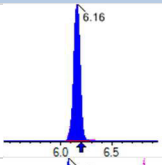
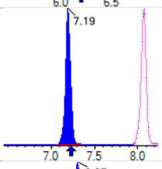
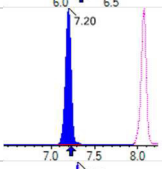
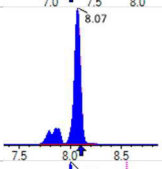
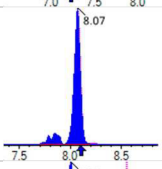
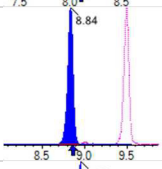
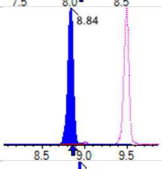
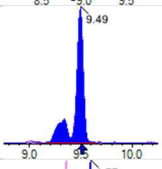
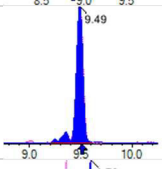
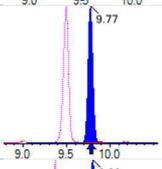
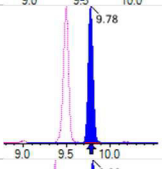
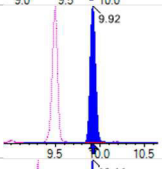
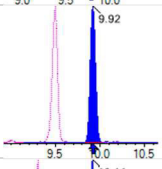
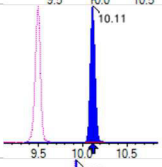
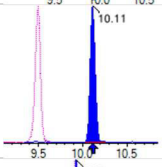
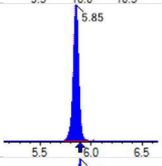
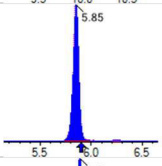
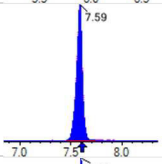
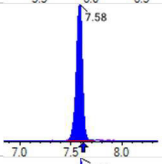
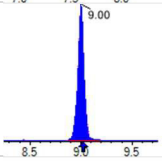
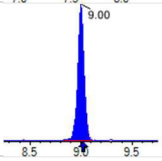
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 521283	(3.74 , 1.00) (0.00 , N/A , 0.0)	64.0	N/A 0.0 0.0	7.8153 [8.0000]	97.7%			
PFPeA	(262.9 / 219.0) 352654 (262.9 / 69.0) 4723	(5.05 , 1.00) (0.00 , N/A , 0.0)	733.4 142.8	0.0134 106.6 106.6	3.8762 [4.0000]	96.9%			
PFHxA	(313.0 / 269.0) 273990 (313.0 / 119.0) 23426	(6.19 , 1.00) (0.00 , N/A , 0.0)	596.0 194.8	0.0855 92.4 92.4	2.2108 [2.0000]	110.5%			
PFHpA	(363.0 / 319.0) 253738 (363.0 / 169.0) 72500	(7.12 , 1.00) (0.00 , N/A , -0.1)	486.6 415.8	0.2857 91.8 91.8	2.1598 [2.0000]	108.0%			
PFOA	(413.0 / 369.0) 261722 (413.0 / 169.0) 89729	(7.94 , 1.00) (0.00 , N/A , 0.3)	530.8 718.6	0.3428 102.2 102.2	1.8646 [2.0000]	93.2%			
PFNA	(463.0 / 419.0) 196810 (463.0 / 169.0) 40835	(8.68 , 1.00) (0.00 , N/A , -0.1)	375.3 76.9	0.2075 118.2 118.2	2.0341 [2.0000]	101.7%			
PFDA	(513.0 / 469.0) 236417 (513.0 / 169.0) 22896	(9.35 , 1.00) (0.01 , N/A , 0.6)	295.7 134.2	0.0968 96.2 96.2	1.7054 [2.0000]	85.3%			
PFUnA	(563.0 / 519.0) 327077 (563.0 / 169.0) 26457	(9.73 , 1.00) (0.00 , N/A , -0.3)	463.5 126.9	0.0809 88.4 88.4	1.9535 [2.0000]	97.7%			
PFDoA	(613.0 / 569.0) 384313 (613.0 / 169.0) 47625	(9.90 , 1.00) (0.00 , N/A , 0.0)	780.9 189.4	0.1239 96.7 96.7	1.8709 [2.0000]	93.5%			
PFTrDA	(663.0 / 619.0) 370971 (663.0 / 169.0) 73664	(10.03 , 1.01) (N/A , 0.00 , 0.1)	627.4 257.9	0.1986 90.4 90.4	2.1905 [2.0000]	109.5%			
PFTeDA	(713.0 / 669.0) 251126 (713.0 / 169.0) 45614	(10.13 , 1.00) (0.00 , N/A , -0.2)	523.6 197.0	0.1816 97.6 97.6	1.8073 [2.0000]	90.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

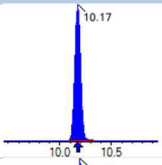
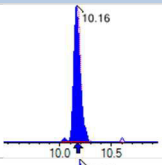
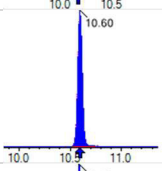
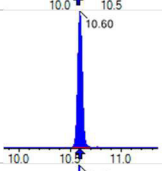
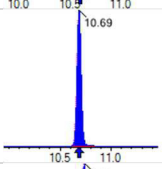
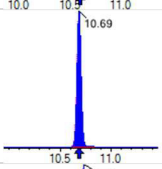
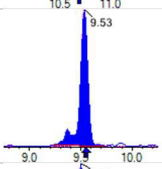
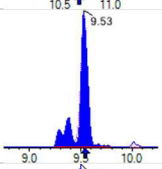
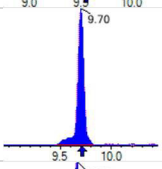
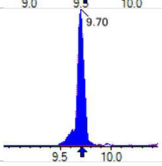
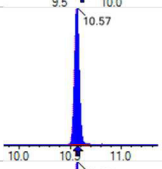
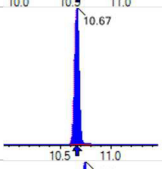
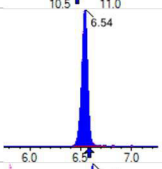
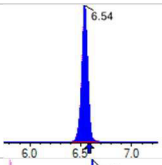
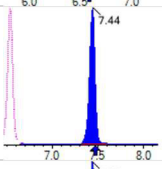
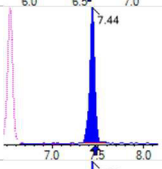
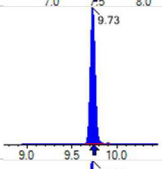
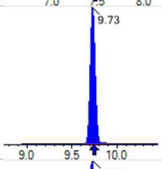
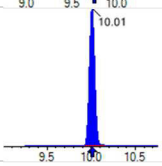
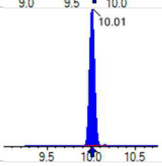
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 399690 (298.9 / 99.0) 271711	(6.16 , 1.00) (0.00 , N/A , 0.0)	657.2 685.3	0.6798 94.4 94.4	1.8668 [1.7695]	105.5%			
PFPeS	(349.0 / 80.0) 700884 (349.0 / 99.0) 244137	(7.19 , 0.89) (N/A , -0.04 , -0.3)	934.3 641.9	0.3483 93.0 93.0	1.8611 [1.8768]	99.2%			
PFHxS	(399.0 / 80.0) 593243 (399.0 / 99.0) 204683	(8.07 , 1.00) (0.00 , N/A , 0.0)	4198.1 49801.5	0.3450 107.0 107.0	1.7258 [1.8220]	94.7%			
PFHpS	(449.0 / 80.0) 504794 (449.0 / 99.0) 154118	(8.84 , 0.93) (N/A , -0.03 , -0.1)	638.7 470.9	0.3053 99.4 99.4	1.8688 [1.9028]	98.2%			
PFOS	(499.0 / 80.0) 626181 (499.0 / 99.0) 140172	(9.49 , 1.00) (0.00 , N/A , 0.3)	149.9 205.2	0.2239 97.5 97.5	1.9076 [1.8550]	102.8%			
PFNS	(549.0 / 80.0) 752461 (549.0 / 99.0) 229833	(9.77 , 1.03) (N/A , 0.00 , -0.1)	644.6 737.7	0.3054 117.8 117.8	1.8605 [1.9198]	96.9%			
PFDS	(599.0 / 80.0) 1021053 (599.0 / 99.0) 255891	(9.92 , 1.04) (N/A , 0.00 , -0.1)	951.0 524.3	0.2506 111.3 111.3	1.9203 [1.9262]	99.7%			
PFDoS	(698.9 / 80.0) 604400 (698.9 / 99.0) 124167	(10.11 , 1.07) (N/A , -0.01 , 0.0)	831.9 501.9	0.2054 101.5 101.5	2.2471 [1.9391]	115.9%			
4:2FTS	(327.0 / 307.0) 561734 (327.0 / 81.0) 307869	(5.85 , 1.00) (0.00 , N/A , 0.0)	953.8 580.9	0.5481 90.3 90.3	7.4483 [7.4762]	99.6%			
6:2FTS	(427.0 / 407.0) 331406 (427.0 / 81.0) 225416	(7.59 , 1.00) (0.00 , N/A , 0.1)	737.9 565.4	0.6802 104.7 104.7	7.9705 [7.5923]	105.0%			
8:2FTS	(527.0 / 507.0) 282426 (527.0 / 81.0) 180594	(9.00 , 1.00) (0.00 , N/A , 0.1)	473.9 354.1	0.6394 102.0 102.0	7.5776 [7.6663]	98.8%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

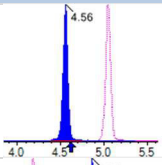
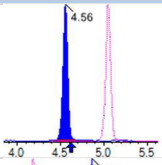
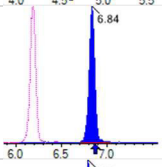
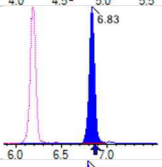
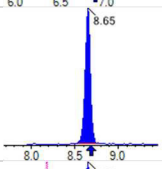
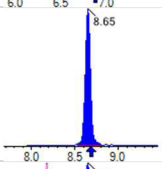
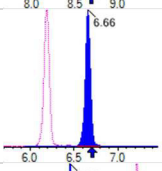
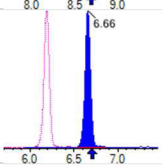
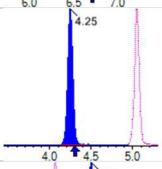
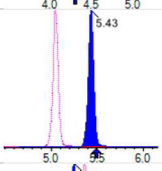
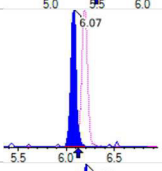
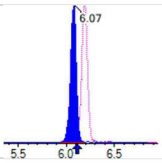
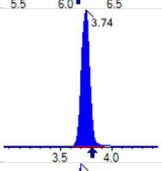
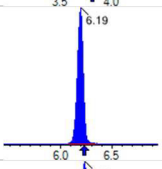
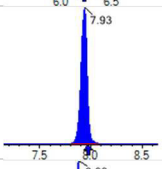
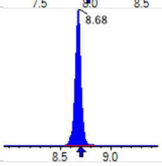
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1033250 (498.0 / 478.0) 20256	(10.17 , 1.00) (0.00 , N/A , 0.7)	1124.8 1128.7	0.0196 86.1 86.1	2.2099 [2.0000]	110.5%			
NMeFOSA	(511.9 / 219.0) 806028 (511.9 / 169.0) 545125	(10.60 , 1.00) (0.00 , N/A , 0.0)	867.7 1095.5	0.6763 106.0 106.0	8.1041 [8.0000]	101.3%			
NEtFOSA	(526.0 / 219.0) 741467 (526.0 / 169.0) 822114	(10.69 , 1.00) (0.00 , N/A , 0.0)	1398.0 1346.0	1.1088 103.9 103.9	7.5260 [8.0000]	94.1%			
NMeFOSAA	(570.0 / 419.0) 115495 (570.0 / 483.0) 58777	(9.53 , 1.00) (0.00 , N/A , 0.1)	317.6 233.5	0.5089 88.7 88.7	2.1441 [2.0000]	107.2%			
NEtFOSAA	(584.0 / 419.0) 121264 (584.0 / 526.0) 62833	(9.70 , 1.00) (0.00 , N/A , 0.2)	934.5 356.5	0.5182 91.4 91.4	2.1213 [2.0000]	106.1%			
NMeFOSE	(616.1 / 59.0) 241287	(10.57 , 1.00) (0.00 , N/A , 0.0)	729.7	N/A 0.0 0.0	7.3639 [8.0000]	92.0%			
NEtFOSE	(630.0 / 59.0) 60435	(10.67 , 1.00) (0.01 , N/A , 0.0)	950.3	N/A 0.0 0.0	7.4001 [8.0000]	92.5%			
HFPO-DA	(285.0 / 169.0) 240754 (285.0 / 185.0) 715161	(6.54 , 1.00) (0.00 , N/A , 0.0)	532.0 989.0	2.9705 112.9 112.9	3.6520 [4.0000]	91.3%			
ADONA	(377.0 / 85.0) 978775 (377.0 / 251.0) 123153	(7.44 , 1.14) (N/A , -0.03 , 0.0)	787.5 372.2	0.1258 106.7 106.7	3.4816 [3.7708]	92.3%			
9Cl-Pf3ONS	(531.0 / 351.0) 2687817 (533.0 / 353.0) 867444	(9.73 , 1.49) (N/A , 0.00 , 0.0)	726.9 763.1	0.3227 111.3 111.3	3.3719 [3.7330]	90.3%			
11Cl-PF3OUDS	(631.0 / 451.0) 1788684 (633.0 / 453.0) 542381	(10.01 , 1.53) (N/A , 0.00 , 0.0)	913.1 696.5	0.3032 96.1 96.1	3.5015 [3.7728]	92.8%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

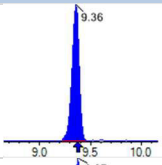
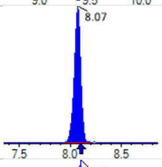
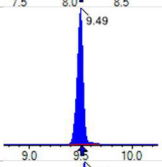
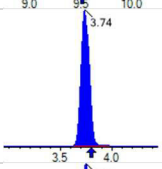
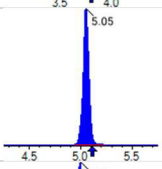
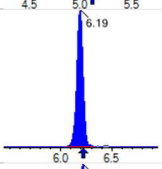
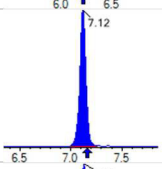
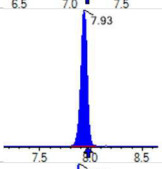
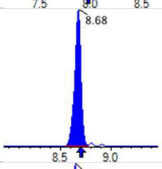
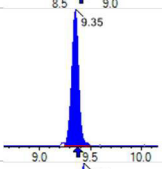
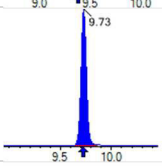
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 30472 (241.0 / 117.0) 52613	(4.56 , 0.90) (N/A , -0.06 , 0.1)	444.2 449.4	1.7266 105.3 105.3	7.9696 [8.0000]	99.6%			
5:3FTCA	(341.0 / 236.7) 213757 (341.0 / 217.0) 360066	(6.84 , 1.10) (N/A , -0.04 , 0.0)	542.0 451.8	1.6845 106.9 106.9	8.6199 [8.0000]	107.7%			
7:3FTCA	(441.0 / 317.0) 247588 (441.0 / 337.0) 214717	(8.65 , 1.40) (N/A , -0.03 , 0.0)	351.2 406.1	0.8672 103.5 103.5	7.9797 [8.0000]	99.7%			
PFEESA	(315.0 / 135.0) 544606 (315.0 / 83.0) 149416	(6.66 , 1.08) (N/A , -0.04 , 0.1)	936.7 544.5	0.2744 89.5 89.5	4.0353 [3.5698]	113.0%			
PFMPA	(229.0 / 85.0) 103603	(4.25 , 0.84) (N/A , -0.06 , 0.0)	817.6	N/A 0.0 0.0	4.1950 [4.0000]	104.9%			
PFMBA	(279.0 / 85.0) 322612	(5.43 , 1.08) (N/A , -0.06 , 0.0)	837.4	N/A 0.0 0.0	3.9033 [4.0000]	97.6%			
NFDHA	(201.0 / 85.0) 10183 (295.0 / 201.0) 71338	(6.07 , 0.98) (N/A , -0.04 , 0.0)	198.6 618.0	7.0057 106.4 106.4	3.9282 [4.0000]	98.2%			
13C3_PFBA_IIS	(216.0 / 172.0) 120239	(3.74 , N/A) (N/A , -0.06 , N/A)	778.8	N/A	0.9910 [1.0000]	99.1% { 94.9% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 198173	(6.19 , N/A) (N/A , -0.04 , N/A)	473.8	N/A	1.0860 [1.0000]	108.6% { 101.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 183914	(7.93 , N/A) (N/A , -0.03 , N/A)	948.8	N/A	1.0536 [1.0000]	105.4% { 104.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 135808	(8.68 , N/A) (N/A , -0.03 , N/A)	347.8	N/A	0.9994 [1.0000]	99.9% { 102.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

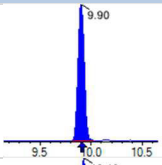
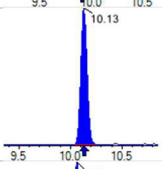
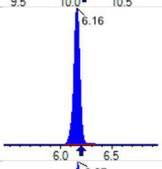
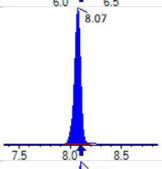
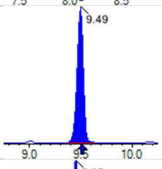
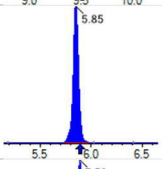
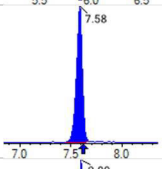
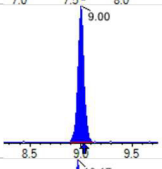
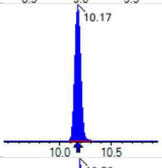
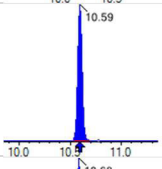
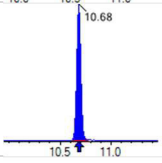
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 137382	(9.36 , N/A) (N/A , -0.02 , N/A)	403.3	N/A	0.9901 [1.0000]	99.0% { 97.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 299066	(8.07 , N/A) (N/A , -0.03 , N/A)	939.8	N/A	0.9267 [1.0000]	92.7% { 89.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 258856	(9.49 , N/A) (N/A , -0.01 , N/A)	568.8	N/A	1.0279 [1.0000]	102.8% { 93.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 759623	(3.74 , N/A) (N/A , -0.06 , N/A)	788.5	N/A	8.2879 [8.0000]	103.6% { 95.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 409983	(5.05 , N/A) (N/A , -0.06 , N/A)	719.2	N/A	3.7358 [4.0000]	93.4% { 96.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 279695	(6.19 , N/A) (N/A , -0.04 , N/A)	594.6	N/A	1.6747 [2.0000]	83.7% { 88.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 253878	(7.12 , N/A) (N/A , -0.04 , N/A)	507.3	N/A	1.7511 [2.0000]	87.6% { 88.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 280931	(7.93 , N/A) (N/A , -0.03 , N/A)	587.3	N/A	1.9921 [2.0000]	99.6% { 103.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 106130	(8.68 , N/A) (N/A , -0.03 , N/A)	283.5	N/A	1.0143 [1.0000]	101.4% { 98.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 137102	(9.35 , N/A) (N/A , -0.03 , N/A)	473.4	N/A	1.0406 [1.0000]	104.1% { 112.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 193012	(9.73 , N/A) (N/A , 0.00 , N/A)	433.2	N/A	1.0666 [1.0000]	106.7% { 103.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

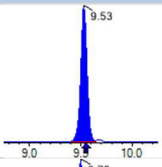
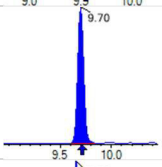
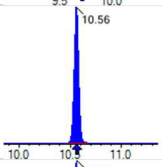
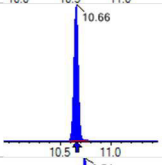
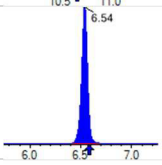
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 237203	(9.90 , N/A) (N/A , 0.00 , N/A)	390.7	N/A	1.0659 [1.0000]	106.6% { 97.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 152044	(10.13 , N/A) (N/A , 0.00 , N/A)	415.3	N/A	1.0881 [1.0000]	108.8% { 102.2% }			
13C3_PFBS_EIS	(302.0 / 80.0) 757837	(6.16 , N/A) (N/A , -0.04 , N/A)	622.2	N/A	2.2023 [2.0000]	110.1% { 98.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 428070	(8.07 , N/A) (N/A , -0.03 , N/A)	640.8	N/A	2.2105 [2.0000]	110.5% { 95.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 597041	(9.49 , N/A) (N/A , -0.01 , N/A)	346.2	N/A	1.8525 [2.0000]	92.6% { 93.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 92518	(5.85 , N/A) (N/A , -0.05 , N/A)	623.9	N/A	4.6002 [4.0000]	115.0% { 99.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 102037	(7.58 , N/A) (N/A , -0.03 , N/A)	436.6	N/A	4.1494 [4.0000]	103.7% { 91.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 104682	(9.00 , N/A) (N/A , -0.03 , N/A)	583.3	N/A	4.2668 [4.0000]	106.7% { 94.6% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 953329	(10.17 , N/A) (N/A , 0.00 , N/A)	852.4	N/A	1.9555 [2.0000]	97.8% { 92.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 239101	(10.59 , N/A) (N/A , 0.00 , N/A)	1205.5	N/A	1.9107 [2.0000]	95.5% { 102.2% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 213162	(10.68 , N/A) (N/A , 0.00 , N/A)	1102.1	N/A	1.9634 [2.0000]	98.2% { 99.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B014.wiff- 0
Acquired: 2022/12/13 - 21:58

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 278724	(9.53 , N/A) (N/A , -0.01 , N/A)	461.1	N/A	3.6538 [4.0000]	91.3% { 88.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 262675	(9.70 , N/A) (N/A , -0.01 , N/A)	341.3	N/A	3.8055 [4.0000]	95.1% { 88.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 485730	(10.56 , N/A) (N/A , 0.00 , N/A)	1038.3	N/A	20.2473 [20.0000]	101.2% { 107.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 241423	(10.66 , N/A) (N/A , 0.00 , N/A)	1233.7	N/A	20.0838 [20.0000]	100.4% { 100.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 852806	(6.54 , N/A) (N/A , -0.04 , N/A)	906.2	N/A	8.3362 [8.0000]	104.2% { 113.8% }			

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2251013
Laboratory ID: SB03835-LCV1
Sequence: SB03835
Standard ID: 22L0176

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.384	-4.1	30.00
PFPEA	0.200	0.224	11.8	30.00
PFHXA	0.100	0.111	11.4	30.00
PFHPA	0.100	0.116	16.4	30.00
PFOA	0.100	0.135	34.8 *	30.00
PFNA	0.100	0.0925	-7.5	30.00
PFDA	0.100	0.116	15.5	30.00
PFUnA	0.100	0.0828	-17.2	30.00
PFDOA	0.100	0.0982	-1.8	30.00
PFTRDA	0.100	0.0889	-11.1	30.00
PFTEDA	0.100	0.0951	-4.9	30.00
PFBS	0.0885	0.0865	-2.3	30.00
PFPES	0.0940	0.108	14.4	30.00
PFHXS	0.0915	0.107	16.4	30.00
PFHPS	0.0955	0.108	13.4	30.00
PFOS	0.0930	0.102	9.8	30.00
PFNS	0.0960	0.124	29.1	30.00
PFDS	0.0965	0.0954	-1.1	30.00
PFDOS	0.0970	0.102	4.9	30.00
4:2FTS	0.375	0.360	-4.0	30.00
6:2FTS	0.380	0.377	-0.8	30.00
8:2FTS	0.384	0.486	26.7	30.00
PFOSA	0.100	0.119	18.7	30.00
NMeFOSA	0.400	0.447	11.9	30.00
NEtFOSA	0.400	0.395	-1.1	30.00
NMeFOSAA	0.100	0.109	9.1	30.00
NEtFOSAA	0.100	0.0995	-0.5	30.00
NMeFOSE	0.400	0.477	19.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2251013
Laboratory ID: SB03835-LCV1
Sequence: SB03835
Standard ID: 22L0176

NEtFOSE	0.400	0.381	-4.7	30.00
HFPO-DA	0.200	0.244	22.0	30.00
ADONA	0.189	0.220	16.6	30.00
PFEESA	0.178	0.174	-2.1	30.00
PFMPA	0.200	0.230	14.8	30.00
PFMBA	0.200	0.221	10.6	30.00
NFDHA	0.200	0.499	150 *	30.00
9CL-PF3ONS	0.187	0.221	18.2	30.00
11CL-PF3OUDS	0.189	0.226	19.4	30.00
3:3FTCA	0.400	0.329	-17.7	30.00
5:3FTCA	0.400	0.387	-3.2	30.00
7:3FTCA	0.400	0.498	24.6	30.00

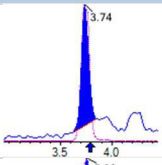
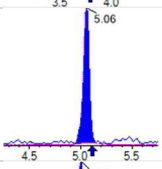
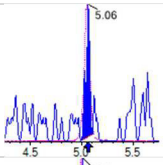
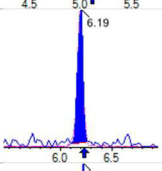
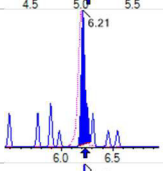
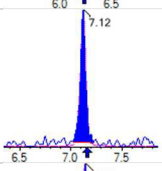
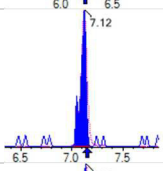
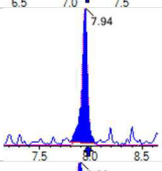
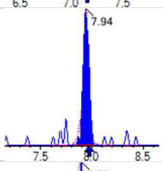
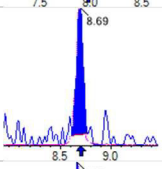
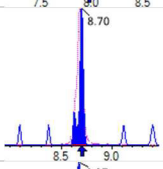
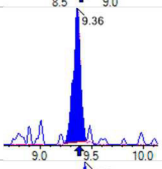
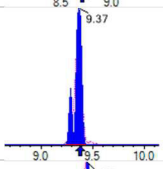
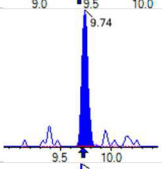
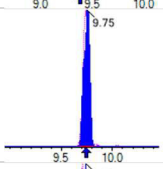
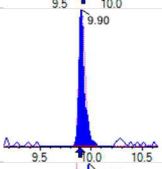
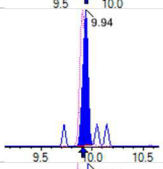
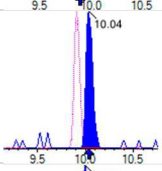
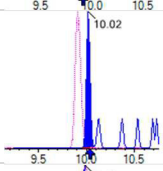
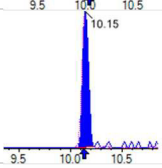
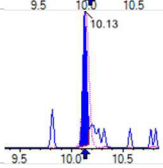
* Values outside of QC limits

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-n
Acquired: 2022/12/14 - 11:08

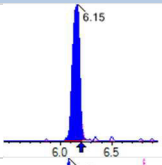
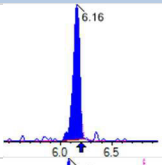
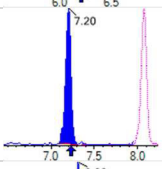
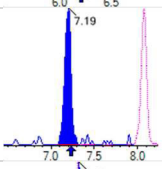
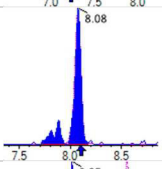
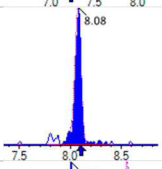
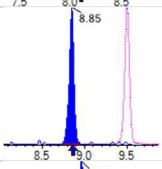
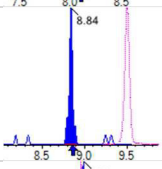
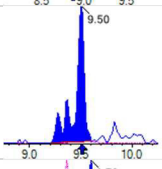
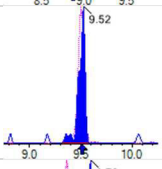
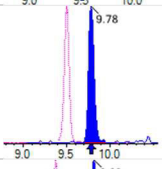
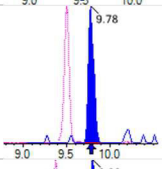
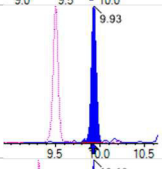
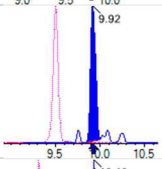
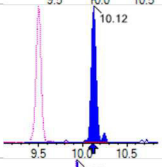
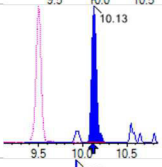
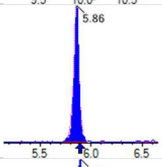
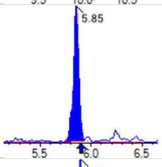
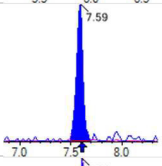
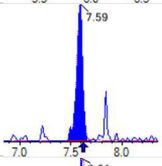
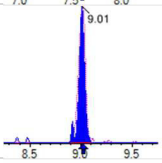
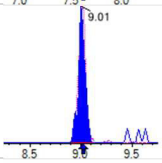
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 20109	(3.74 , 1.00) (-0.01 , N/A , 0.0)	37.6	N/A 0.0 0.0	0.3836 [0.4000]	95.9%			
PFPeA	(262.9 / 219.0) 15029 (262.9 / 69.0) 191	(5.06 , 1.00) (0.01 , N/A , -0.3)	136.8 13.6	0.0127 101.1 108.1	0.2236 [0.2000]	111.8%			
PFHxA	(313.0 / 269.0) 11403 (313.0 / 119.0) 1181	(6.19 , 1.00) (0.00 , N/A , -0.9)	65.1 35.6	0.1035 111.8 97.2	0.1114 [0.1000]	111.4%			
PFHpA	(363.0 / 319.0) 11854 (363.0 / 169.0) 2843	(7.12 , 1.00) (0.00 , N/A , 0.0)	63.6 60.1	0.2398 77.1 74.1	0.1164 [0.1000]	116.4%			
PFOA	(413.0 / 369.0) 14374 (413.0 / 169.0) 3385	(7.94 , 1.00) (0.00 , N/A , 0.0)	45.6 62.9	0.2355 70.2 80.8	0.1348 [0.1000]	134.8%			QC,
PFNA	(463.0 / 419.0) 6566 (463.0 / 169.0) 1906	(8.69 , 1.00) (0.01 , N/A , -0.4)	23.5 35.9	0.2903 165.4 142.4	0.0925 [0.1000]	92.5%			IR2,
PFDA	(513.0 / 469.0) 13597 (513.0 / 169.0) 1403	(9.36 , 1.00) (0.00 , N/A , -0.4)	39.8 108.1	0.1032 102.5 78.7	0.1155 [0.1000]	115.5%			
PFUnA	(563.0 / 519.0) 12011 (563.0 / 169.0) 1556	(9.74 , 1.00) (0.00 , N/A , -0.8)	56.9 184.3	0.1296 141.5 149.2	0.0828 [0.1000]	82.8%			
PFDoA	(613.0 / 569.0) 15762 (613.0 / 169.0) 2864	(9.90 , 1.00) (-0.01 , N/A , -2.1)	74.7 63.0	0.1817 141.8 127.6	0.0982 [0.1000]	98.2%			
PFTrDA	(663.0 / 619.0) 11758 (663.0 / 169.0) 1575	(10.04 , 1.01) (N/A , 0.01 , 1.1)	63.1 44.7	0.1340 61.0 58.1	0.0889 [0.1000]	88.9%			
PFTeDA	(713.0 / 669.0) 11415 (713.0 / 169.0) 2492	(10.15 , 1.00) (0.01 , N/A , 1.0)	67.8 32.3	0.2183 117.3 124.4	0.0951 [0.1000]	95.1%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-
Acquired: 2022/12/14 - 11:08

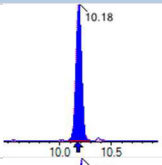
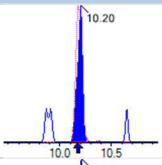
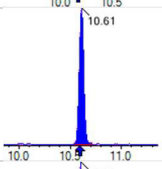
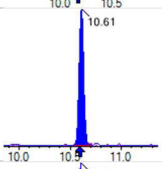
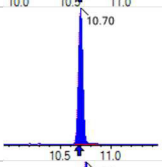
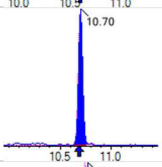
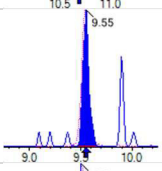
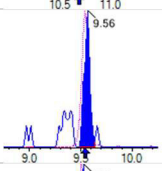
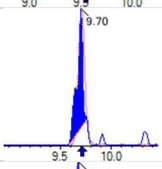
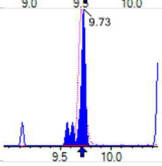
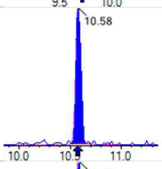
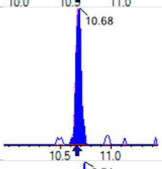
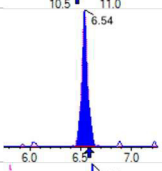
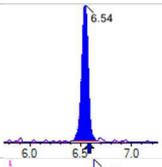
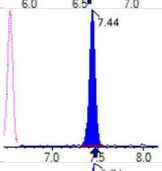
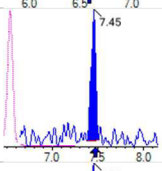
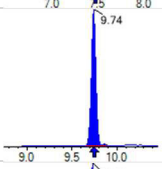
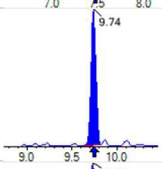
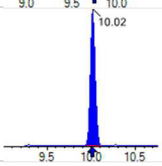
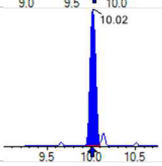
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 15999 (298.9 / 99.0) 12304	(6.15 , 1.00) (0.00 , N/A , -0.4)	177.1 113.9	0.7690 106.8 115.7	0.0865 [0.0885]	97.7%			
PFPeS	(349.0 / 80.0) 31980 (349.0 / 99.0) 10287	(7.20 , 0.89) (N/A , 0.02 , 0.3)	246.6 82.7	0.3217 85.9 85.9	0.1075 [0.0938]	114.6%			
PFHxS	(399.0 / 80.0) 28922 (399.0 / 99.0) 9793	(8.08 , 1.00) (0.00 , N/A , -0.2)	1679840.9 315.4	0.3386 105.0 97.9	0.1065 [0.0911]	117.0%			MI5 DG 2022-12-14
PFHpS	(449.0 / 80.0) 28278 (449.0 / 99.0) 4781	(8.85 , 0.93) (N/A , 0.02 , 0.5)	198.2 188.7	0.1691 55.1 56.6	0.1083 [0.0951]	113.9%			
PFOS	(499.0 / 80.0) 32389 (499.0 / 99.0) 7435	(9.50 , 1.00) (0.00 , N/A , -1.1)	45118.5 3711.0	0.2295 100.0 90.0	0.1021 [0.0927]	110.1%			
PFNS	(549.0 / 80.0) 48440 (549.0 / 99.0) 9930	(9.78 , 1.03) (N/A , 0.00 , 0.3)	151.3 78.1	0.2050 79.1 86.6	0.1239 [0.0960]	129.1%			
PFDS	(599.0 / 80.0) 49029 (599.0 / 99.0) 9548	(9.93 , 1.05) (N/A , 0.01 , 0.5)	166.8 37.8	0.1947 86.5 78.9	0.0954 [0.0963]	99.1%			
PFDoS	(698.9 / 80.0) 26450 (698.9 / 99.0) 6933	(10.12 , 1.07) (N/A , 0.01 , -0.1)	204.1 61.0	0.2621 129.5 129.9	0.1018 [0.0970]	105.0%			
4:2FTS	(327.0 / 307.0) 21916 (327.0 / 81.0) 11978	(5.86 , 1.00) (0.00 , N/A , 0.3)	332.8 130.1	0.5466 90.1 95.7	0.3600 [0.3738]	96.3%			
6:2FTS	(427.0 / 407.0) 13821 (427.0 / 81.0) 10675	(7.59 , 1.00) (0.00 , N/A , -0.1)	84.5 63.8	0.7724 118.9 104.1	0.3770 [0.3796]	99.3%			
8:2FTS	(527.0 / 507.0) 12439 (527.0 / 81.0) 5906	(9.01 , 1.00) (0.00 , N/A , 0.2)	244.7 118.2	0.4748 75.7 69.0	0.4864 [0.3833]	126.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-
Acquired: 2022/12/14 - 11:08

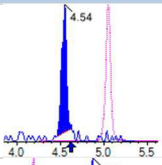
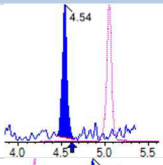
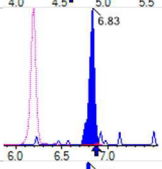
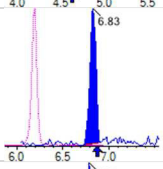
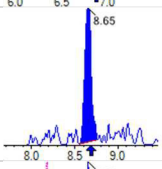
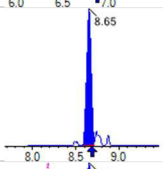
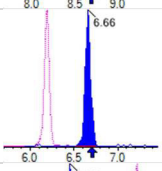
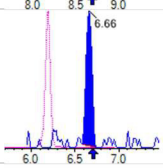
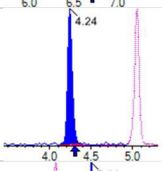
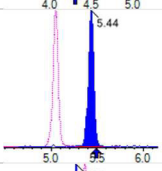
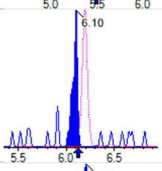
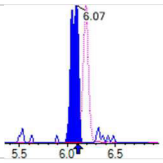
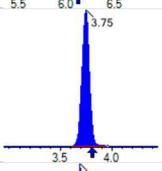
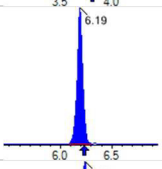
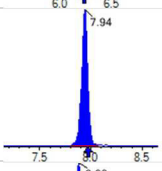
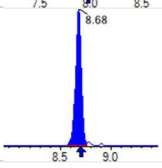
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 44217 (498.0 / 478.0) 1814	(10.18 , 1.00) (0.00 , N/A , -1.0)	242.7 216.9	0.0410 180.3 148.5	0.1187 [0.1000]	118.7%			
NMeFOSA	(511.9 / 219.0) 34642 (511.9 / 169.0) 22030	(10.61 , 1.00) (0.00 , N/A , 0.1)	411.0 397.1	0.6359 99.7 99.7	0.4475 [0.4000]	111.9%			
NEtFOSA	(526.0 / 219.0) 34357 (526.0 / 169.0) 36474	(10.70 , 1.00) (0.00 , N/A , 0.1)	667.1 307.1	1.0616 99.4 97.7	0.3954 [0.4000]	98.9%			
NMeFOSAA	(570.0 / 419.0) 5136 (570.0 / 483.0) 3229	(9.55 , 1.00) (0.01 , N/A , -0.9)	268.8 1473.3	0.6286 109.5 120.3	0.1091 [0.1000]	109.1%			
NEtFOSAA	(584.0 / 419.0) 5072 (584.0 / 526.0) 2650	(9.70 , 1.00) (-0.01 , N/A , -1.6)	12.6 1575.4	0.5225 92.2 88.7	0.0995 [0.1000]	99.5%			
NMeFOSE	(616.1 / 59.0) 11091	(10.58 , 1.00) (0.01 , N/A , 0.0)	145.4	N/A 0.0 0.0	0.4768 [0.4000]	119.2%			
NEtFOSE	(630.0 / 59.0) 2508	(10.68 , 1.00) (0.01 , N/A , 0.0)	105.2	N/A 0.0 0.0	0.3812 [0.4000]	95.3%			
HFPO-DA	(285.0 / 169.0) 11031 (285.0 / 185.0) 27019	(6.54 , 1.00) (0.00 , N/A , -0.3)	222.3 166.1	2.4493 93.1 83.5	0.2439 [0.2000]	122.0%			
ADONA	(377.0 / 85.0) 42516 (377.0 / 251.0) 4910	(7.44 , 1.14) (N/A , 0.01 , -0.9)	364.4 29.5	0.1155 97.9 107.5	0.2205 [0.1885]	116.9%			
9Cl-Pf3ONS	(531.0 / 351.0) 120854 (533.0 / 353.0) 46846	(9.74 , 1.49) (N/A , 0.01 , 0.1)	327.7 163.2	0.3876 133.7 124.4	0.2210 [0.1867]	118.4%			
11Cl-PF3OUDS	(631.0 / 451.0) 79106 (633.0 / 453.0) 22526	(10.02 , 1.53) (N/A , 0.00 , -0.2)	2282.5 332.4	0.2848 90.3 82.2	0.2257 [0.1886]	119.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-o
Acquired: 2022/12/14 - 11:08

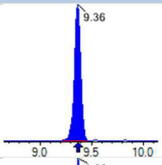
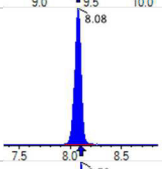
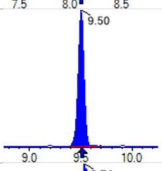
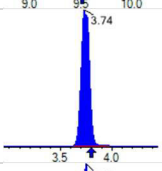
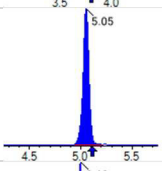
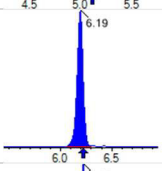
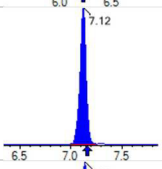
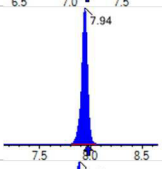
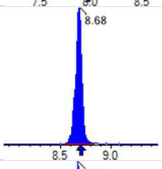
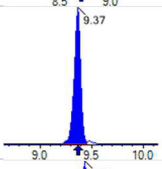
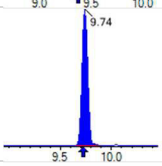
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 930 (241.0 / 117.0) 2221	(4.54 , 0.90) (N/A , 0.03 , 0.4)	12.0 46.8	2.3886 145.7 130.2	0.3292 [0.4000]	82.3%			
5:3FTCA	(341.0 / 236.7) 7936 (341.0 / 217.0) 17540	(6.83 , 1.10) (N/A , 0.02 , 0.1)	94.5 72.7	2.2102 140.2 142.9	0.3873 [0.4000]	96.8%			
7:3FTCA	(441.0 / 317.0) 12772 (441.0 / 337.0) 12380	(8.65 , 1.40) (N/A , 0.02 , 0.0)	32.0 106.3	0.9694 115.7 119.5	0.4982 [0.4000]	124.6%			
PFEESA	(315.0 / 135.0) 19434 (315.0 / 83.0) 4936	(6.66 , 1.08) (N/A , 0.01 , -0.2)	290.1 44.8	0.2540 82.8 82.8	0.1743 [0.1785]	97.6%			
PFMPA	(229.0 / 85.0) 4191	(4.24 , 0.84) (N/A , 0.02 , 0.0)	207.0	N/A 0.0 0.0	0.2297 [0.2000]	114.8%			
PFMBA	(279.0 / 85.0) 13508	(5.44 , 1.08) (N/A , 0.02 , 0.0)	366.4	N/A 0.0 0.0	0.2212 [0.2000]	110.6%			
NFDHA	(201.0 / 85.0) 1294 (295.0 / 201.0) 4855	(6.10 , 0.99) (N/A , 0.04 , 1.6)	34.5 78.3	3.7532 57.0 51.8	0.4991 [0.2000]	249.6%			QC,
13C3_PFBA_IIS	(216.0 / 172.0) 98277	(3.75 , N/A) (N/A , 0.03 , N/A)	747.6	N/A	0.8100 [1.0000]	81.0% { 102.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 159168	(6.19 , N/A) (N/A , 0.01 , N/A)	731.3	N/A	0.8722 [1.0000]	87.2% { 90.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 146557	(7.94 , N/A) (N/A , 0.02 , N/A)	585.2	N/A	0.8396 [1.0000]	84.0% { 101.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 109385	(8.68 , N/A) (N/A , 0.01 , N/A)	456.1	N/A	0.8050 [1.0000]	80.5% { 93.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-
Acquired: 2022/12/14 - 11:08

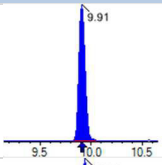
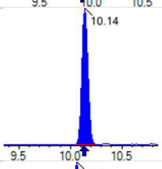
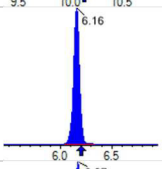
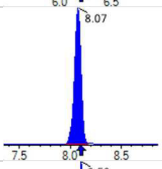
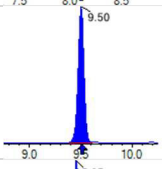
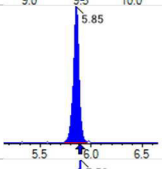
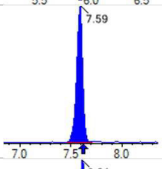
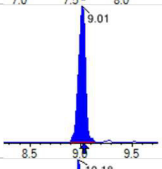
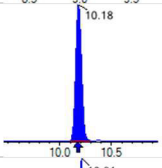
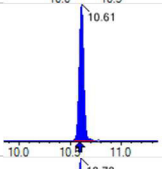
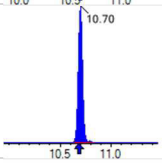
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 125383	(9.36 , N/A) (N/A , 0.02 , N/A)	381.6	N/A	0.9036 [1.0000]	90.4% { 95.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 267732	(8.08 , N/A) (N/A , 0.02 , N/A)	714.4	N/A	0.8296 [1.0000]	83.0% { 94.5% }			
13C4_PFOS_IIS	(502.8 / 79.9) 232394	(9.50 , N/A) (N/A , 0.01 , N/A)	400.6	N/A	0.9229 [1.0000]	92.3% { 91.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 596994	(3.74 , N/A) (N/A , 0.03 , N/A)	898.0	N/A	7.9692 [8.0000]	99.6% { 93.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 302908	(5.05 , N/A) (N/A , 0.02 , N/A)	782.5	N/A	3.4365 [4.0000]	85.9% { 92.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 231091	(6.19 , N/A) (N/A , 0.02 , N/A)	606.3	N/A	1.7228 [2.0000]	86.1% { 83.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 220086	(7.12 , N/A) (N/A , 0.02 , N/A)	510.6	N/A	1.8901 [2.0000]	94.5% { 94.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 213427	(7.94 , N/A) (N/A , 0.02 , N/A)	1047.2	N/A	1.8992 [2.0000]	95.0% { 92.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 77865	(8.68 , N/A) (N/A , 0.02 , N/A)	380.7	N/A	0.9239 [1.0000]	92.4% { 75.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 116397	(9.37 , N/A) (N/A , 0.02 , N/A)	395.8	N/A	0.9680 [1.0000]	96.8% { 95.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 167272	(9.74 , N/A) (N/A , 0.01 , N/A)	344.0	N/A	1.0128 [1.0000]	101.3% { 95.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-
Acquired: 2022/12/14 - 11:08

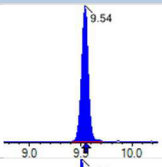
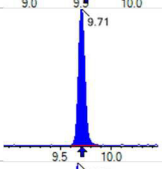
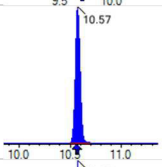
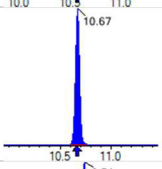
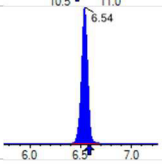
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 185268	(9.91 , N/A) (N/A , 0.01 , N/A)	365.0	N/A	0.9122 [1.0000]	91.2% { 88.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 131335	(10.14 , N/A) (N/A , 0.01 , N/A)	339.3	N/A	1.0299 [1.0000]	103.0% { 97.4% }			
13C3_PFBS_EIS	(302.0 / 80.0) 655051	(6.16 , N/A) (N/A , 0.01 , N/A)	781.4	N/A	2.1264 [2.0000]	106.3% { 96.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 338017	(8.07 , N/A) (N/A , 0.01 , N/A)	889.9	N/A	1.9497 [2.0000]	97.5% { 89.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 576970	(9.50 , N/A) (N/A , 0.01 , N/A)	360.7	N/A	1.9941 [2.0000]	99.7% { 96.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 74685	(5.85 , N/A) (N/A , 0.02 , N/A)	524.3	N/A	4.1481 [4.0000]	103.7% { 99.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 89978	(7.59 , N/A) (N/A , 0.01 , N/A)	471.0	N/A	4.0873 [4.0000]	102.2% { 89.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 71825	(9.01 , N/A) (N/A , 0.01 , N/A)	308.0	N/A	3.2702 [4.0000]	81.8% { 74.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 759574	(10.18 , N/A) (N/A , 0.01 , N/A)	832.6	N/A	1.7355 [2.0000]	86.8% { 86.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 186100	(10.61 , N/A) (N/A , 0.01 , N/A)	757.9	N/A	1.6565 [2.0000]	82.8% { 79.6% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 187990	(10.70 , N/A) (N/A , 0.01 , N/A)	702.8	N/A	1.9287 [2.0000]	96.4% { 99.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A03.wiff-o
Acquired: 2022/12/14 - 11:08

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 243624	(9.54 , N/A) (N/A , 0.01 , N/A)	426.5	N/A	3.5574 [4.0000]	88.9% { 96.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 234337	(9.71 , N/A) (N/A , 0.01 , N/A)	405.2	N/A	3.7816 [4.0000]	94.5% { 95.4% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 344810	(10.57 , N/A) (N/A , 0.01 , N/A)	935.8	N/A	16.0098 [20.0000]	80.0% { 84.9% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 194511	(10.67 , N/A) (N/A , 0.01 , N/A)	1337.3	N/A	18.0237 [20.0000]	90.1% { 89.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 584998	(6.54 , N/A) (N/A , 0.01 , N/A)	885.2	N/A	7.1197 [8.0000]	89.0% { 88.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV1	PFBA	8.00	8.01	100	ng/mL	+/- 30.00%
	PFPEA	4.00	4.05	101	ng/mL	+/- 30.00%
	PFHXA	2.00	1.98	99.0	ng/mL	+/- 30.00%
	PFHPA	2.00	1.96	97.9	ng/mL	+/- 30.00%
	PFOA	2.00	2.02	101	ng/mL	+/- 30.00%
	PFNA	2.00	1.80	89.9	ng/mL	+/- 30.00%
	PFDA	2.00	1.81	90.4	ng/mL	+/- 30.00%
	PFUnA	2.00	2.35	117	ng/mL	+/- 30.00%
	PFDOA	2.00	1.86	93.1	ng/mL	+/- 30.00%
	PFTRDA	2.00	2.11	105	ng/mL	+/- 30.00%
	PFTEDA	2.00	2.08	104	ng/mL	+/- 30.00%
	PFBS	1.77	1.69	95.7	ng/mL	+/- 30.00%
	PFPES	1.88	1.88	100	ng/mL	+/- 30.00%
	PFHXS	1.83	1.77	97.0	ng/mL	+/- 30.00%
	PFHPS	1.91	1.86	97.4	ng/mL	+/- 30.00%
	PFOS	1.86	1.75	94.3	ng/mL	+/- 30.00%
	PFNS	1.92	2.04	106	ng/mL	+/- 30.00%
	PFDS	1.93	1.80	93.1	ng/mL	+/- 30.00%
	PFDOS	1.94	2.18	112	ng/mL	+/- 30.00%
	4:2FTS	7.50	8.01	107	ng/mL	+/- 30.00%
	6:2FTS	7.60	7.30	96.1	ng/mL	+/- 30.00%
	8:2FTS	7.68	7.36	95.8	ng/mL	+/- 30.00%
	PFOSA	2.00	2.17	109	ng/mL	+/- 30.00%
	NMeFOSA	8.00	8.19	102	ng/mL	+/- 30.00%
	NEtFOSA	8.00	8.27	103	ng/mL	+/- 30.00%
	NMeFOSAA	2.00	2.10	105	ng/mL	+/- 30.00%
	NEtFOSAA	2.00	2.14	107	ng/mL	+/- 30.00%
	NMeFOSE	8.00	7.69	96.1	ng/mL	+/- 30.00%
	NEtFOSE	8.00	8.15	102	ng/mL	+/- 30.00%
	HFPO-DA	4.00	4.01	100	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

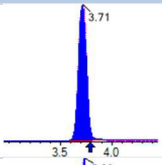
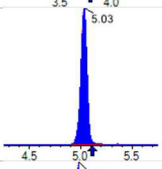
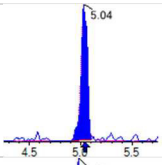
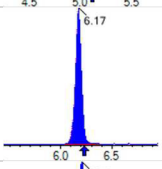
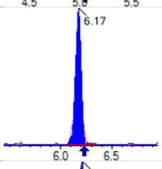
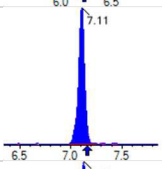
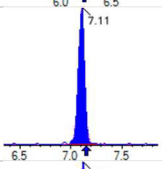
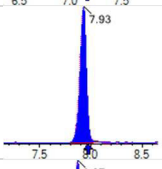
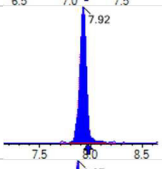
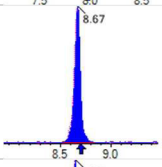
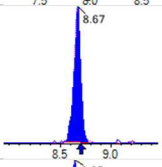
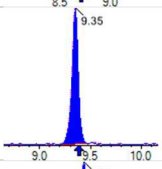
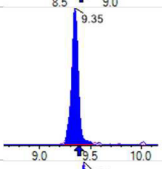
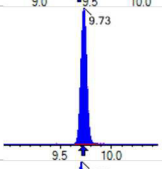
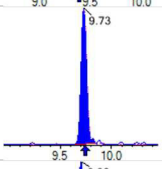
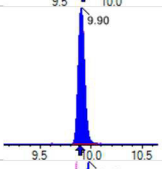
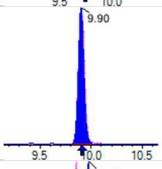
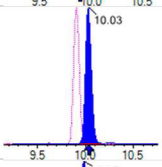
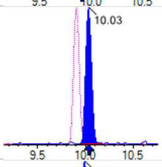
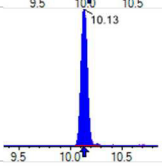
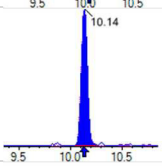
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV1	ADONA	3.78	4.08	108	ng/mL	+/- 30.00%
	PFEESA	3.56	3.78	106	ng/mL	+/- 30.00%
	PFMPA	4.00	3.92	97.9	ng/mL	+/- 30.00%
	PFMBA	4.00	4.24	106	ng/mL	+/- 30.00%
	NFDHA	4.00	3.75	93.8	ng/mL	+/- 30.00%
	9CL-PF3ONS	3.74	3.84	103	ng/mL	+/- 30.00%
	11CL-PF3OUDS	3.78	3.68	97.2	ng/mL	+/- 30.00%
	3:3FTCA	8.00	8.08	101	ng/mL	+/- 30.00%
	5:3FTCA	8.00	8.68	109	ng/mL	+/- 30.00%
	7:3FTCA	8.00	7.69	96.1	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-
Acquired: 2022/12/14 - 11:21

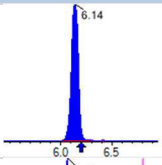
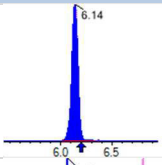
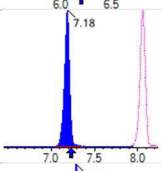
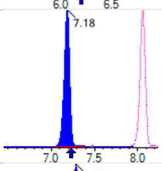
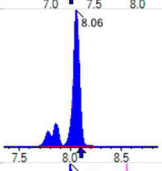
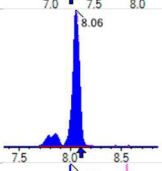
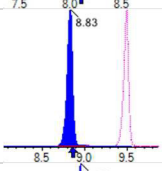
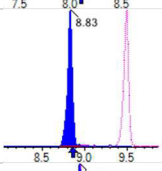
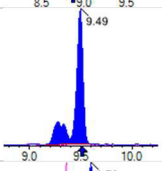
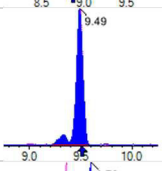
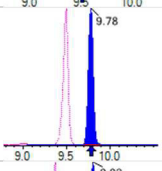
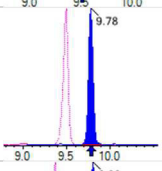
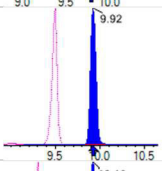
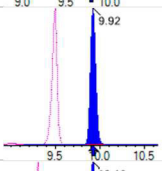
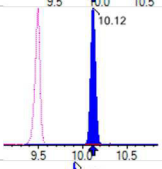
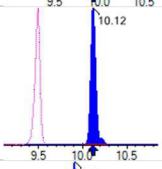
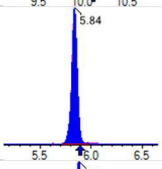
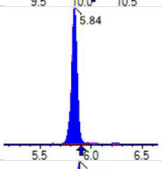
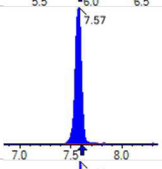
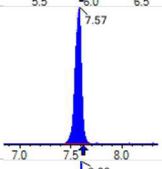
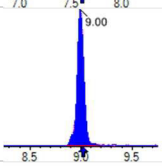
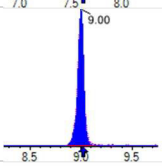
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 450471	(3.71 , 1.00) (0.00 , N/A , 0.0)	64.9	N/A 0.0 0.0	8.0099 [8.0000]	100.1%			
PFPeA	(262.9 / 219.0) 293625 (262.9 / 69.0) 3448	(5.03 , 1.00) (0.00 , N/A , -0.3)	512.9 105.4	0.0117 93.5 100.0	4.0502 [4.0000]	101.3%			
PFHxA	(313.0 / 269.0) 242765 (313.0 / 119.0) 25858	(6.17 , 1.00) (0.00 , N/A , 0.1)	495.9 329.3	0.1065 115.0 100.0	1.9792 [2.0000]	99.0%			
PFHpA	(363.0 / 319.0) 210590 (363.0 / 169.0) 68202	(7.11 , 1.00) (0.00 , N/A , 0.1)	435.5 349.1	0.3239 104.1 100.0	1.9577 [2.0000]	97.9%			
PFOA	(413.0 / 369.0) 234122 (413.0 / 169.0) 68205	(7.93 , 1.00) (0.00 , N/A , 0.1)	487.1 334.8	0.2913 86.8 100.0	2.0215 [2.0000]	101.1%			
PFNA	(463.0 / 419.0) 168572 (463.0 / 169.0) 34379	(8.67 , 1.00) (0.01 , N/A , 0.0)	378.9 70.9	0.2039 116.2 100.0	1.7971 [2.0000]	89.9%			
PFDA	(513.0 / 469.0) 223105 (513.0 / 169.0) 29228	(9.35 , 1.00) (0.00 , N/A , 0.1)	271.6 163.0	0.1310 130.1 100.0	1.8074 [2.0000]	90.4%			
PFUnA	(563.0 / 519.0) 356024 (563.0 / 169.0) 30906	(9.73 , 1.00) (0.00 , N/A , 0.0)	565.9 201.3	0.0868 94.8 100.0	2.3492 [2.0000]	117.5%			
PFDoA	(613.0 / 569.0) 337301 (613.0 / 169.0) 48022	(9.90 , 1.00) (0.00 , N/A , 0.1)	747.2 470.9	0.1424 111.1 100.0	1.8624 [2.0000]	93.1%			
PFTrDA	(663.0 / 619.0) 314485 (663.0 / 169.0) 72464	(10.03 , 1.01) (N/A , 0.00 , -0.2)	551.1 251.7	0.2304 104.9 100.0	2.1062 [2.0000]	105.3%			
PFTeDA	(713.0 / 669.0) 256722 (713.0 / 169.0) 45054	(10.13 , 1.00) (0.00 , N/A , -0.1)	591.5 199.2	0.1755 94.3 100.0	2.0827 [2.0000]	104.1%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-
Acquired: 2022/12/14 - 11:21

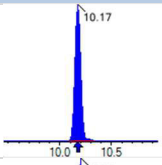
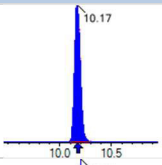
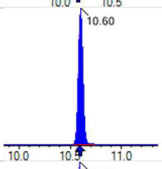
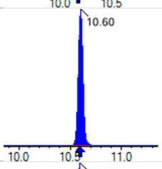
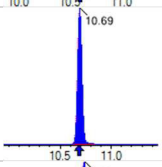
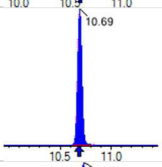
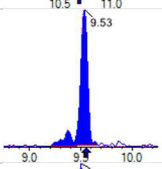
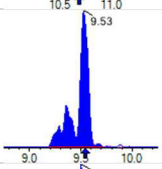
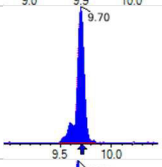
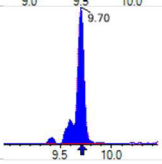
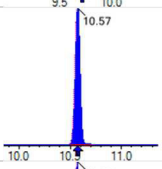
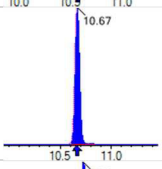
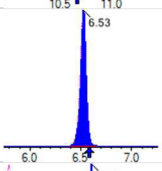
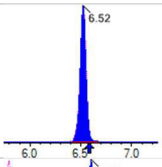
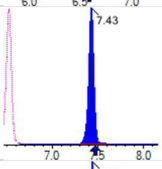
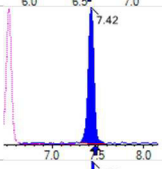
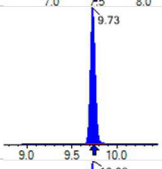
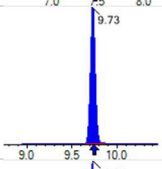
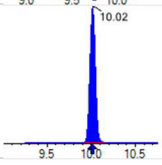
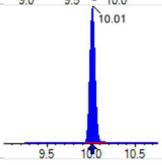
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 325536 (298.9 / 99.0) 216392	(6.14 , 1.00) (0.00 , N/A , 0.1)	599.5 522.1	0.6647 92.3 100.0	1.6941 [1.7695]	95.7%			
PFPeS	(349.0 / 80.0) 625468 (349.0 / 99.0) 234207	(7.18 , 0.89) (N/A , 0.00 , 0.0)	636.9 490.1	0.3745 100.0 100.0	1.8837 [1.8768]	100.4%			
PFHxS	(399.0 / 80.0) 537843 (399.0 / 99.0) 186027	(8.06 , 1.00) (0.00 , N/A , 0.1)	74821.6 43764.4	0.3459 107.2 100.0	1.7745 [1.8220]	97.4%			
PFHpS	(449.0 / 80.0) 501200 (449.0 / 99.0) 149845	(8.83 , 0.93) (N/A , 0.00 , -0.1)	567.6 503.0	0.2990 97.4 100.0	1.8610 [1.9028]	97.8%			
PFOS	(499.0 / 80.0) 574108 (499.0 / 99.0) 146421	(9.49 , 1.00) (0.00 , N/A , 0.2)	112.7 184.9	0.2550 111.1 100.0	1.7541 [1.8550]	94.6%			
PFNS	(549.0 / 80.0) 822505 (549.0 / 99.0) 194735	(9.78 , 1.03) (N/A , 0.00 , 0.0)	659.8 479.0	0.2368 91.3 100.0	2.0396 [1.9198]	106.2%			
PFDS	(599.0 / 80.0) 952563 (599.0 / 99.0) 234987	(9.92 , 1.05) (N/A , 0.00 , 0.1)	796.5 585.6	0.2467 109.6 100.0	1.7968 [1.9262]	93.3%			
PFDoS	(698.9 / 80.0) 583949 (698.9 / 99.0) 117794	(10.12 , 1.07) (N/A , 0.00 , -0.1)	834.1 8925.4	0.2017 99.6 100.0	2.1774 [1.9391]	112.3%			
4:2FTS	(327.0 / 307.0) 488607 (327.0 / 81.0) 279054	(5.84 , 1.00) (0.00 , N/A , 0.1)	932.3 503.7	0.5711 94.1 100.0	8.0096 [7.4762]	107.1%			
6:2FTS	(427.0 / 407.0) 300268 (427.0 / 81.0) 222810	(7.57 , 1.00) (0.00 , N/A , -0.1)	696.0 730.2	0.7420 114.2 100.0	7.3010 [7.5923]	96.2%			
8:2FTS	(527.0 / 507.0) 254061 (527.0 / 81.0) 174796	(9.00 , 1.00) (0.00 , N/A , -0.3)	291.9 555.0	0.6880 109.7 100.0	7.3567 [7.6663]	96.0%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-o
Acquired: 2022/12/14 - 11:21

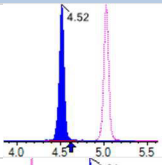
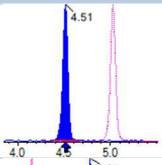
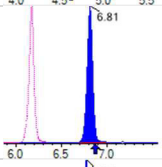
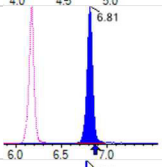
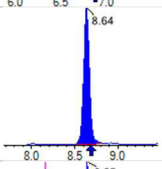
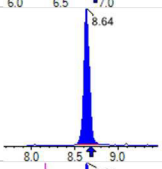
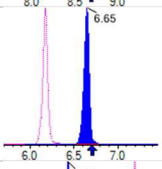
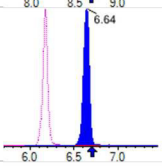
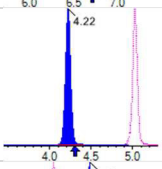
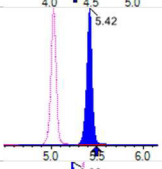
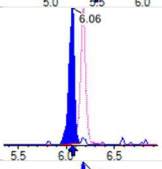
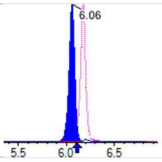
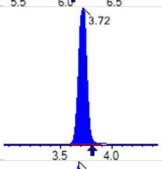
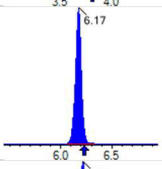
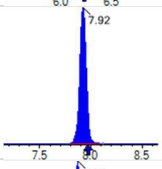
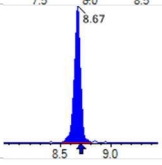
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 939862 (498.0 / 478.0) 25975	(10.17 , 1.00) (0.00 , N/A , 0.3)	1112.0 206.3	0.0276 121.4 100.0	2.1700 [2.0000]	108.5%			
NMeFOSA	(511.9 / 219.0) 796904 (511.9 / 169.0) 508514	(10.60 , 1.00) (0.00 , N/A , 0.0)	1518.1 1320.6	0.6381 100.0 100.0	8.1911 [8.0000]	102.4%			
NEtFOSA	(526.0 / 219.0) 723422 (526.0 / 169.0) 785696	(10.69 , 1.00) (0.00 , N/A , 0.0)	1201.5 1623.2	1.0861 101.7 100.0	8.2657 [8.0000]	103.3%			
NMeFOSAA	(570.0 / 419.0) 102968 (570.0 / 483.0) 53818	(9.53 , 1.00) (0.00 , N/A , 0.0)	222.2 1164.0	0.5227 91.1 100.0	2.0992 [2.0000]	105.0%			
NEtFOSAA	(584.0 / 419.0) 114270 (584.0 / 526.0) 67347	(9.70 , 1.00) (0.00 , N/A , -0.1)	3999.5 65064.7	0.5894 104.0 100.0	2.1374 [2.0000]	106.9%			
NMeFOSE	(616.1 / 59.0) 210678	(10.57 , 1.00) (0.01 , N/A , 0.0)	832.2	N/A 0.0 0.0	7.6915 [8.0000]	96.1%			
NEtFOSE	(630.0 / 59.0) 60175	(10.67 , 1.00) (0.01 , N/A , 0.0)	752.4	N/A 0.0 0.0	8.1514 [8.0000]	101.9%			
HFPO-DA	(285.0 / 169.0) 205773 (285.0 / 185.0) 603252	(6.53 , 1.00) (0.00 , N/A , 0.3)	1006.4 818.6	2.9316 111.5 100.0	4.0060 [4.0000]	100.1%			
ADONA	(377.0 / 85.0) 893364 (377.0 / 251.0) 95940	(7.43 , 1.14) (N/A , 0.00 , 0.1)	879.8 268.8	0.1074 91.1 100.0	4.0783 [3.7708]	108.2%			
9Cl-Pf3ONS	(531.0 / 351.0) 2385164 (533.0 / 353.0) 743441	(9.73 , 1.49) (N/A , 0.00 , -0.1)	880.6 832.3	0.3117 107.5 100.0	3.8402 [3.7330]	102.9%			
11Cl-PF3OUDS	(631.0 / 451.0) 1463195 (633.0 / 453.0) 506956	(10.02 , 1.54) (N/A , 0.00 , 0.2)	999.4 959.9	0.3465 109.8 100.0	3.6760 [3.7728]	97.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-o
Acquired: 2022/12/14 - 11:21

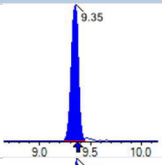
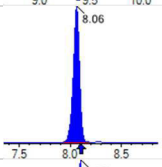
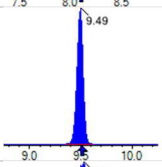
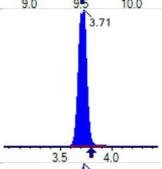
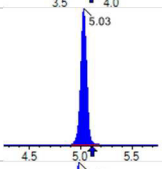
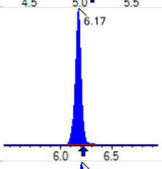
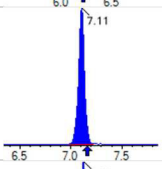
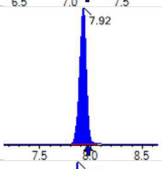
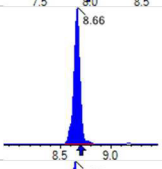
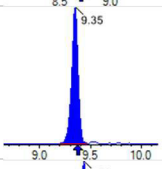
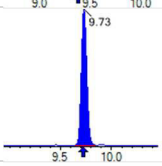
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 24608 (241.0 / 117.0) 45154	(4.52 , 0.90) (N/A , 0.00 , 0.2)	486.8 494.6	1.8350 111.9 100.0	8.0766 [8.0000]	101.0%			
5:3FTCA	(341.0 / 236.7) 213083 (341.0 / 217.0) 329647	(6.81 , 1.10) (N/A , 0.00 , 0.0)	602.6 476.3	1.5470 98.2 100.0	8.6819 [8.0000]	108.5%			
7:3FTCA	(441.0 / 317.0) 236191 (441.0 / 337.0) 191550	(8.64 , 1.40) (N/A , 0.00 , 0.0)	292.1 350.1	0.8110 96.8 100.0	7.6914 [8.0000]	96.1%			
PFEESA	(315.0 / 135.0) 505496 (315.0 / 83.0) 155018	(6.65 , 1.08) (N/A , 0.00 , 0.2)	745.0 541.7	0.3067 100.0 100.0	3.7844 [3.5698]	106.0%			
PFMPA	(229.0 / 85.0) 77098	(4.22 , 0.84) (N/A , 0.00 , 0.0)	791.9	N/A 0.0 0.0	3.9177 [4.0000]	97.9%			
PFMBA	(279.0 / 85.0) 279537	(5.42 , 1.08) (N/A , 0.00 , 0.0)	776.8	N/A 0.0 0.0	4.2444 [4.0000]	106.1%			
NFDHA	(201.0 / 85.0) 9638 (295.0 / 201.0) 69852	(6.06 , 0.98) (N/A , 0.00 , -0.1)	111.5 474.2	7.2472 110.0 100.0	3.7514 [4.0000]	93.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 96278	(3.72 , N/A) (N/A , 0.00 , N/A)	669.8	N/A	0.7935 [1.0000]	79.4% { 100.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 175192	(6.17 , N/A) (N/A , 0.00 , N/A)	554.8	N/A	0.9600 [1.0000]	96.0% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 144958	(7.92 , N/A) (N/A , 0.00 , N/A)	536.4	N/A	0.8304 [1.0000]	83.0% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 117192	(8.67 , N/A) (N/A , 0.00 , N/A)	305.4	N/A	0.8624 [1.0000]	86.2% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-n
Acquired: 2022/12/14 - 11:21

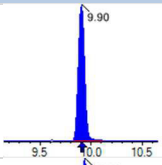
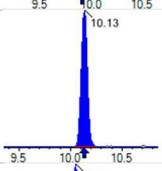
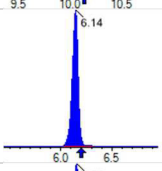
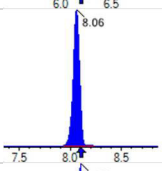
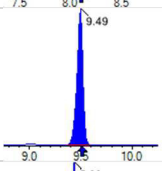
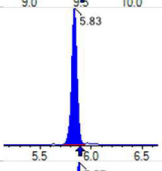
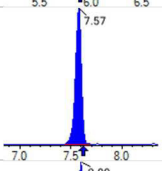
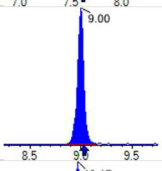
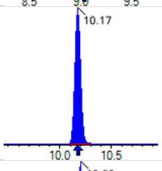
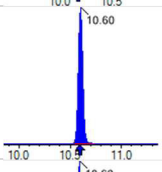
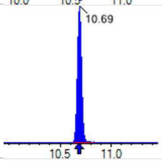
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 130981	(9.35 , N/A) (N/A , 0.00 , N/A)	333.9	N/A	0.9440 [1.0000]	94.4% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 283288	(8.06 , N/A) (N/A , 0.00 , N/A)	698.2	N/A	0.8778 [1.0000]	87.8% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 254551	(9.49 , N/A) (N/A , 0.00 , N/A)	787.1	N/A	1.0108 [1.0000]	101.1% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 640490	(3.71 , N/A) (N/A , 0.00 , N/A)	787.7	N/A	8.7273 [8.0000]	109.1% { 100.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 326693	(5.03 , N/A) (N/A , 0.00 , N/A)	813.6	N/A	3.3673 [4.0000]	84.2% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 276821	(6.17 , N/A) (N/A , 0.00 , N/A)	775.5	N/A	1.8749 [2.0000]	93.7% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 232466	(7.11 , N/A) (N/A , 0.00 , N/A)	474.0	N/A	1.8138 [2.0000]	90.7% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 231791	(7.92 , N/A) (N/A , 0.00 , N/A)	530.1	N/A	2.0853 [2.0000]	104.3% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 102893	(8.66 , N/A) (N/A , 0.00 , N/A)	391.8	N/A	1.1396 [1.0000]	114.0% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 122079	(9.35 , N/A) (N/A , 0.00 , N/A)	245.8	N/A	0.9718 [1.0000]	97.2% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 174704	(9.73 , N/A) (N/A , 0.00 , N/A)	318.1	N/A	1.0126 [1.0000]	101.3% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-n
Acquired: 2022/12/14 - 11:21

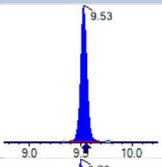
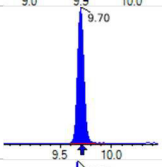
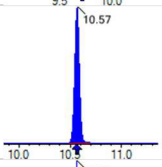
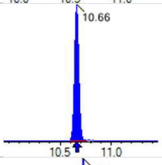
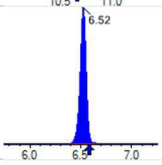
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 209133	(9.90 , N/A) (N/A , 0.00 , N/A)	434.4	N/A	0.9857 [1.0000]	98.6% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 134878	(10.13 , N/A) (N/A , 0.00 , N/A)	391.8	N/A	1.0125 [1.0000]	101.2% { 100.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 680162	(6.14 , N/A) (N/A , 0.00 , N/A)	678.7	N/A	2.0867 [2.0000]	104.3% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 377433	(8.06 , N/A) (N/A , 0.00 , N/A)	590.9	N/A	2.0575 [2.0000]	102.9% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 595289	(9.49 , N/A) (N/A , 0.00 , N/A)	425.5	N/A	1.8783 [2.0000]	93.9% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 74834	(5.83 , N/A) (N/A , 0.00 , N/A)	422.2	N/A	3.9281 [4.0000]	98.2% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 100928	(7.57 , N/A) (N/A , 0.00 , N/A)	618.1	N/A	4.3329 [4.0000]	108.3% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 96996	(9.00 , N/A) (N/A , 0.00 , N/A)	323.4	N/A	4.1738 [4.0000]	104.3% { 100.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 883079	(10.17 , N/A) (N/A , 0.00 , N/A)	749.0	N/A	1.8421 [2.0000]	92.1% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 233883	(10.60 , N/A) (N/A , 0.00 , N/A)	992.9	N/A	1.9007 [2.0000]	95.0% { 100.0% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 189363	(10.69 , N/A) (N/A , 0.00 , N/A)	1059.7	N/A	1.7737 [2.0000]	88.7% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A04.wiff-o
Acquired: 2022/12/14 - 11:21

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 253816	(9.53 , N/A) (N/A , 0.00 , N/A)	435.6	N/A	3.3836 [4.0000]	84.6% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 245660	(9.70 , N/A) (N/A , 0.00 , N/A)	434.7	N/A	3.6192 [4.0000]	90.5% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 406049	(10.57 , N/A) (N/A , 0.00 , N/A)	987.6	N/A	17.2121 [20.0000]	86.1% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 218227	(10.66 , N/A) (N/A , 0.00 , N/A)	1262.1	N/A	18.4612 [20.0000]	92.3% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 664499	(6.52 , N/A) (N/A , 0.00 , N/A)	650.9	N/A	7.3476 [8.0000]	91.8% { 100.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV2	PFBA	8.00	8.08	101	ng/mL	+/- 30.00%
	PFPEA	4.00	4.01	100	ng/mL	+/- 30.00%
	PFHXA	2.00	2.19	109	ng/mL	+/- 30.00%
	PFHPA	2.00	2.21	110	ng/mL	+/- 30.00%
	PFOA	2.00	1.76	88.2	ng/mL	+/- 30.00%
	PFNA	2.00	2.11	105	ng/mL	+/- 30.00%
	PFDA	2.00	2.02	101	ng/mL	+/- 30.00%
	PFUnA	2.00	1.86	92.8	ng/mL	+/- 30.00%
	PFDOA	2.00	1.82	91.2	ng/mL	+/- 30.00%
	PFTRDA	2.00	1.92	96.0	ng/mL	+/- 30.00%
	PFTEDA	2.00	1.90	95.0	ng/mL	+/- 30.00%
	PFBS	1.77	1.87	106	ng/mL	+/- 30.00%
	PFPES	1.88	1.84	98.0	ng/mL	+/- 30.00%
	PFHXS	1.83	1.64	89.4	ng/mL	+/- 30.00%
	PFHPS	1.91	1.70	89.2	ng/mL	+/- 30.00%
	PFOS	1.86	1.86	100	ng/mL	+/- 30.00%
	PFNS	1.92	1.74	90.8	ng/mL	+/- 30.00%
	PFDS	1.93	1.71	88.8	ng/mL	+/- 30.00%
	PFDOS	1.94	1.97	102	ng/mL	+/- 30.00%
	4:2FTS	7.50	7.75	103	ng/mL	+/- 30.00%
	6:2FTS	7.60	7.17	94.3	ng/mL	+/- 30.00%
	8:2FTS	7.68	8.93	116	ng/mL	+/- 30.00%
	PFOSA	2.00	2.01	101	ng/mL	+/- 30.00%
	NMeFOSA	8.00	8.72	109	ng/mL	+/- 30.00%
	NEtFOSA	8.00	7.79	97.4	ng/mL	+/- 30.00%
	NMeFOSAA	2.00	2.37	118	ng/mL	+/- 30.00%
	NEtFOSAA	2.00	1.80	90.2	ng/mL	+/- 30.00%
	NMeFOSE	8.00	7.55	94.4	ng/mL	+/- 30.00%
	NEtFOSE	8.00	8.02	100	ng/mL	+/- 30.00%
	HFPO-DA	4.00	3.93	98.3	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

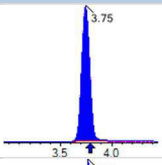
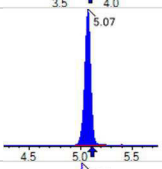
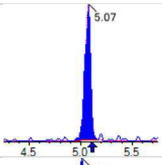
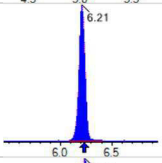
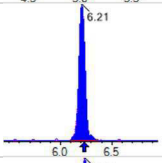
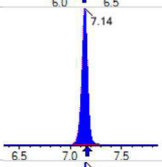
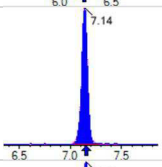
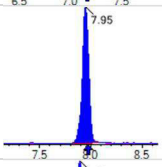
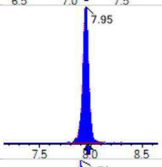
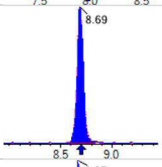
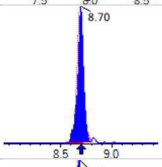
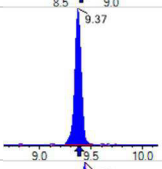
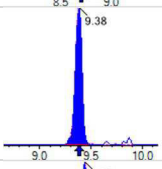
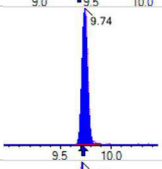
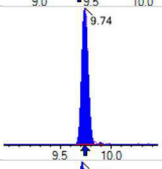
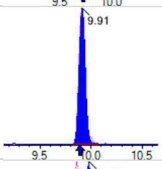
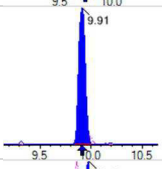
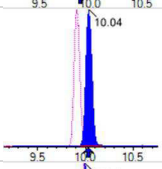
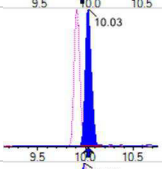
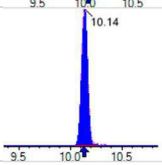
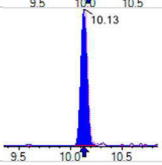
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV2	ADONA	3.78	3.24	85.6	ng/mL	+/- 30.00%
	PFEESA	3.56	3.46	97.1	ng/mL	+/- 30.00%
	PFMPA	4.00	3.85	96.3	ng/mL	+/- 30.00%
	PFMBA	4.00	4.09	102	ng/mL	+/- 30.00%
	NFDHA	4.00	4.73	118	ng/mL	+/- 30.00%
	9CL-PF3ONS	3.74	3.57	95.5	ng/mL	+/- 30.00%
	11CL-PF3OUDS	3.78	3.95	104	ng/mL	+/- 30.00%
	3:3FTCA	8.00	7.97	99.6	ng/mL	+/- 30.00%
	5:3FTCA	8.00	8.42	105	ng/mL	+/- 30.00%
	7:3FTCA	8.00	9.19	115	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

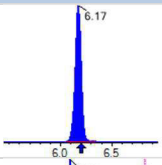
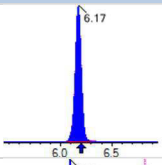
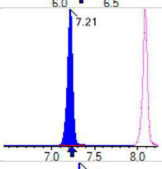
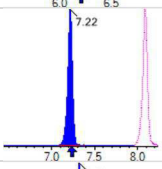
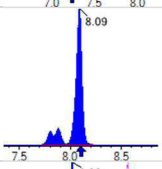
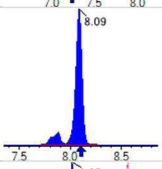
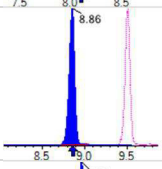
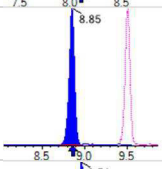
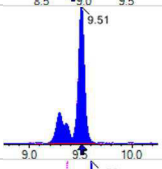
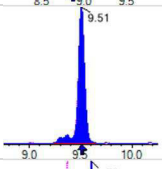
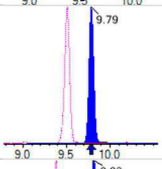
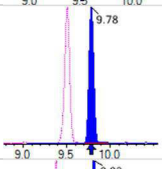
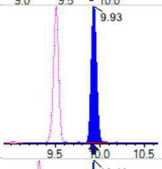
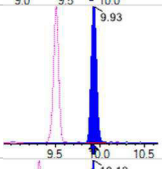
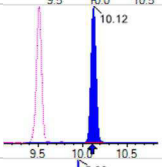
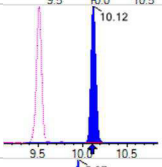
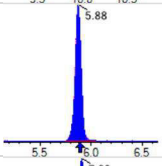
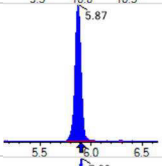
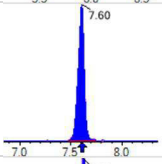
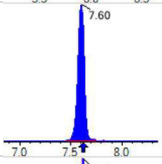
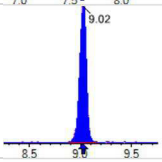
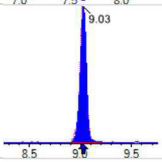
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 471556	(3.75 , 1.00) (0.00 , N/A , 0.0)	71.5	N/A 0.0 0.0	8.0758 [8.0000]	100.9%			
PFPeA	(262.9 / 219.0) 336896 (262.9 / 69.0) 3845	(5.07 , 1.00) (0.00 , N/A , -0.1)	712.8 125.6	0.0114 90.9 97.2	4.0090 [4.0000]	100.2%			
PFHxA	(313.0 / 269.0) 283965 (313.0 / 119.0) 28306	(6.21 , 1.00) (0.00 , N/A , 0.0)	644.5 340.2	0.0997 107.7 93.6	2.1859 [2.0000]	109.3%			
PFHpA	(363.0 / 319.0) 301327 (363.0 / 169.0) 82007	(7.14 , 1.00) (0.00 , N/A , 0.2)	647.7 410.5	0.2722 87.5 84.0	2.2057 [2.0000]	110.3%			
PFOA	(413.0 / 369.0) 264074 (413.0 / 169.0) 87846	(7.95 , 1.00) (0.00 , N/A , -0.1)	530.7 445.4	0.3327 99.1 114.2	1.7644 [2.0000]	88.2%			
PFNA	(463.0 / 419.0) 220521 (463.0 / 169.0) 47294	(8.69 , 1.00) (0.00 , N/A , -0.3)	405.4 58.0	0.2145 122.2 105.2	2.1088 [2.0000]	105.4%			
PFDA	(513.0 / 469.0) 295507 (513.0 / 169.0) 23823	(9.37 , 1.00) (0.00 , N/A , -0.4)	424.3 206.7	0.0806 80.1 61.5	2.0167 [2.0000]	100.8%			
PFUnA	(563.0 / 519.0) 351345 (563.0 / 169.0) 36865	(9.74 , 1.00) (0.00 , N/A , -0.1)	516.5 1059.5	0.1049 114.6 120.9	1.8564 [2.0000]	92.8%			
PFDoA	(613.0 / 569.0) 413746 (613.0 / 169.0) 55063	(9.91 , 1.00) (0.00 , N/A , 0.2)	527.8 584.2	0.1331 103.8 93.5	1.8239 [2.0000]	91.2%			
PFTrDA	(663.0 / 619.0) 358968 (663.0 / 169.0) 69243	(10.04 , 1.01) (N/A , 0.01 , 0.5)	641.3 259.6	0.1929 87.8 83.7	1.9194 [2.0000]	96.0%			
PFTeDA	(713.0 / 669.0) 306380 (713.0 / 169.0) 60635	(10.14 , 1.00) (0.00 , N/A , 0.5)	636.2 232.1	0.1979 106.4 112.8	1.9000 [2.0000]	95.0%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

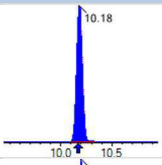
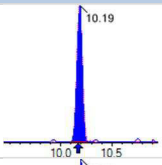
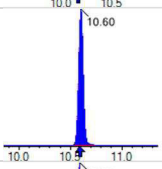
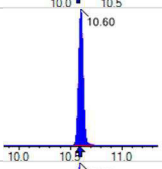
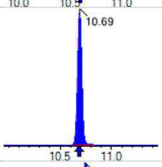
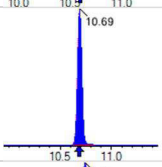
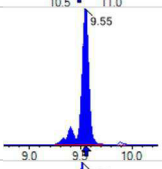
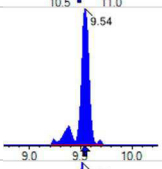
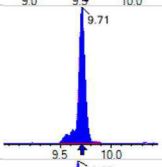
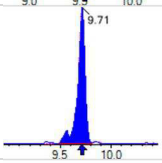
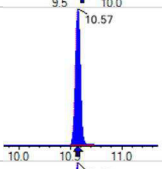
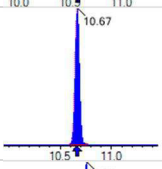
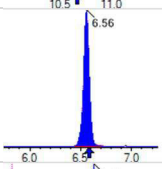
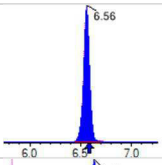
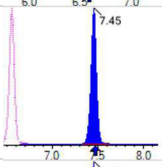
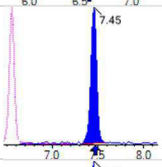
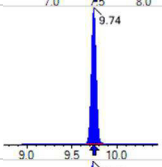
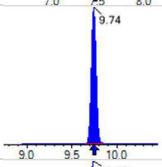
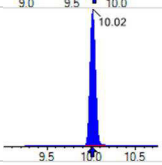
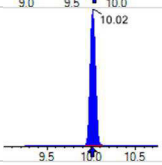
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 398416 (298.9 / 99.0) 250128	(6.17 , 1.00) (0.00 , N/A , 0.0)	737.7 737.1	0.6278 87.1 94.4	1.8733 [1.7695]	105.9%			
PFPeS	(349.0 / 80.0) 725535 (349.0 / 99.0) 284827	(7.21 , 0.89) (N/A , 0.03 , 0.0)	624.9 752.4	0.3926 104.8 104.8	1.8419 [1.8768]	98.1%			
PFHxS	(399.0 / 80.0) 588342 (399.0 / 99.0) 228829	(8.09 , 1.00) (0.00 , N/A , 0.1)	10855.0 57546.4	0.3889 120.6 112.5	1.6363 [1.8220]	89.8%			
PFHpS	(449.0 / 80.0) 532244 (449.0 / 99.0) 147433	(8.86 , 0.93) (N/A , 0.03 , 0.0)	652.8 280.4	0.2770 90.2 92.7	1.7042 [1.9028]	89.6%			
PFOS	(499.0 / 80.0) 706286 (499.0 / 99.0) 161086	(9.51 , 1.00) (0.00 , N/A , 0.0)	104.2 144.3	0.2281 99.4 89.4	1.8609 [1.8550]	100.3%			
PFNS	(549.0 / 80.0) 815284 (549.0 / 99.0) 201460	(9.79 , 1.03) (N/A , 0.01 , 0.0)	790.1 551.5	0.2471 95.3 104.4	1.7434 [1.9198]	90.8%			
PFDS	(599.0 / 80.0) 1053059 (599.0 / 99.0) 232905	(9.93 , 1.04) (N/A , 0.01 , 0.0)	951.7 596.9	0.2212 98.3 89.7	1.7129 [1.9262]	88.9%			
PFDoS	(698.9 / 80.0) 613112 (698.9 / 99.0) 139888	(10.12 , 1.06) (N/A , 0.01 , 0.1)	976.7 426.9	0.2282 112.7 113.1	1.9714 [1.9391]	101.7%			
4:2FTS	(327.0 / 307.0) 495827 (327.0 / 81.0) 297935	(5.88 , 1.00) (0.00 , N/A , 0.1)	711.5 598.9	0.6009 99.0 105.2	7.7500 [7.4762]	103.7%			
6:2FTS	(427.0 / 407.0) 345720 (427.0 / 81.0) 245779	(7.60 , 1.00) (0.00 , N/A , 0.1)	705.5 705.6	0.7109 109.4 95.8	7.1684 [7.5923]	94.4%			
8:2FTS	(527.0 / 507.0) 309475 (527.0 / 81.0) 217822	(9.02 , 1.00) (0.00 , N/A , -0.1)	523.6 359.9	0.7038 112.3 102.3	8.9331 [7.6663]	116.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

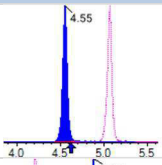
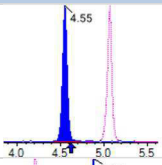
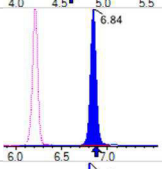
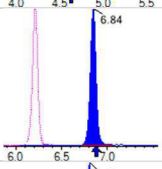
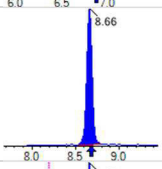
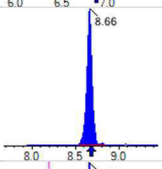
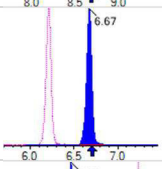
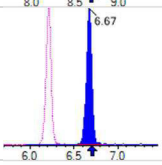
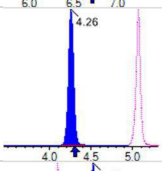
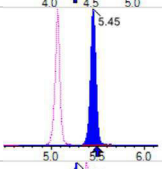
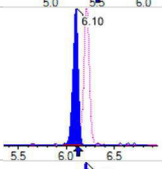
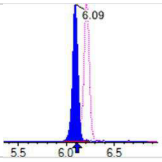
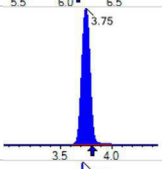
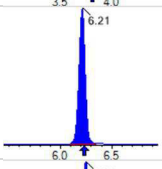
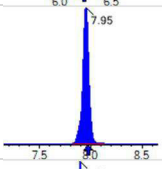
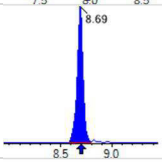
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1063672 (498.0 / 478.0) 26692	(10.18 , 1.00) (0.00 , N/A , -0.2)	986.5 361.6	0.0251 110.2 90.8	2.0143 [2.0000]	100.7%			
NMeFOSA	(511.9 / 219.0) 904078 (511.9 / 169.0) 631018	(10.60 , 1.00) (0.00 , N/A , 0.0)	1232.8 1092.4	0.6980 109.4 109.4	8.7198 [8.0000]	109.0%			
NEtFOSA	(526.0 / 219.0) 839032 (526.0 / 169.0) 927494	(10.69 , 1.00) (0.00 , N/A , 0.0)	1966.9 1613.7	1.1054 103.5 101.8	7.7934 [8.0000]	97.4%			
NMeFOSAA	(570.0 / 419.0) 139044 (570.0 / 483.0) 69640	(9.55 , 1.00) (0.00 , N/A , 0.2)	2749.5 15093763.7	0.5008 87.3 95.8	2.3688 [2.0000]	118.4%			
NEtFOSAA	(584.0 / 419.0) 127378 (584.0 / 526.0) 77123	(9.71 , 1.00) (0.00 , N/A , -0.1)	2799.6 269.6	0.6055 106.8 102.7	1.8040 [2.0000]	90.2%			
NMeFOSE	(616.1 / 59.0) 290519	(10.57 , 1.00) (0.01 , N/A , 0.0)	865.4	N/A 0.0 0.0	7.5504 [8.0000]	94.4%			
NEtFOSE	(630.0 / 59.0) 78277	(10.67 , 1.00) (0.01 , N/A , 0.0)	842.8	N/A 0.0 0.0	8.0203 [8.0000]	100.3%			
HFPO-DA	(285.0 / 169.0) 257334 (285.0 / 185.0) 658359	(6.56 , 1.00) (0.00 , N/A , -0.1)	698.4 924.8	2.5584 97.3 87.3	3.9302 [4.0000]	98.3%			
ADONA	(377.0 / 85.0) 903919 (377.0 / 251.0) 111391	(7.45 , 1.14) (N/A , 0.03 , 0.0)	930.2 296.1	0.1232 104.5 114.7	3.2373 [3.7708]	85.9%			
9Cl-Pf3ONS	(531.0 / 351.0) 2826806 (533.0 / 353.0) 919916	(9.74 , 1.49) (N/A , 0.01 , 0.0)	1233.3 915.9	0.3254 112.2 104.4	3.5705 [3.7330]	95.6%			
11Cl-PF3OUDS	(631.0 / 451.0) 2002304 (633.0 / 453.0) 620059	(10.02 , 1.53) (N/A , 0.00 , -0.1)	846.3 919.9	0.3097 98.2 89.4	3.9465 [3.7728]	104.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

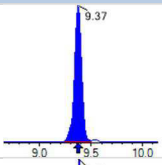
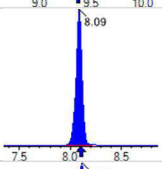
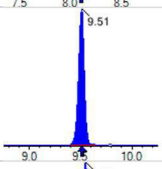
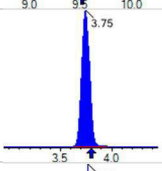
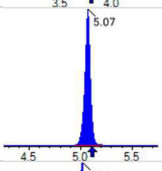
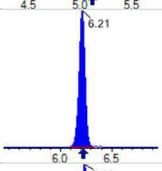
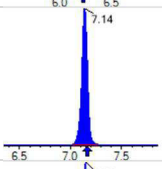
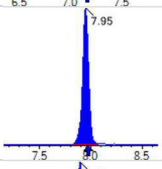
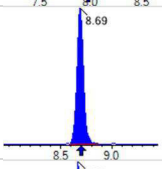
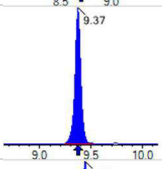
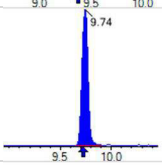
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 28153 (241.0 / 117.0) 49245	(4.55 , 0.90) (N/A , 0.04 , 0.1)	487.0 411.3	1.7492 106.7 95.3	7.9714 [8.0000]	99.6%			
5:3FTCA	(341.0 / 236.7) 218764 (341.0 / 217.0) 359642	(6.84 , 1.10) (N/A , 0.03 , 0.0)	450.5 448.7	1.6440 104.3 106.3	8.4160 [8.0000]	105.2%			
7:3FTCA	(441.0 / 317.0) 298841 (441.0 / 337.0) 250362	(8.66 , 1.39) (N/A , 0.03 , -0.1)	421.0 461.5	0.8378 100.0 103.3	9.1885 [8.0000]	114.9%			
PFEESA	(315.0 / 135.0) 488799 (315.0 / 83.0) 139530	(6.67 , 1.07) (N/A , 0.03 , 0.0)	1133.8 569.8	0.2855 93.1 93.1	3.4552 [3.5698]	96.8%			
PFMPA	(229.0 / 85.0) 87869	(4.26 , 0.84) (N/A , 0.04 , 0.0)	933.7	N/A 0.0 0.0	3.8520 [4.0000]	96.3%			
PFMBA	(279.0 / 85.0) 312163	(5.45 , 1.08) (N/A , 0.03 , 0.0)	770.0	N/A 0.0 0.0	4.0889 [4.0000]	102.2%			
NFDHA	(201.0 / 85.0) 12773 (295.0 / 201.0) 78920	(6.10 , 0.98) (N/A , 0.04 , 0.3)	248.4 463.7	6.1786 93.8 85.3	4.7251 [4.0000]	118.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 99013	(3.75 , N/A) (N/A , 0.03 , N/A)	821.9	N/A	0.8160 [1.0000]	81.6% { 102.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 163411	(6.21 , N/A) (N/A , 0.04 , N/A)	581.3	N/A	0.8955 [1.0000]	89.5% { 93.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 182662	(7.95 , N/A) (N/A , 0.03 , N/A)	562.5	N/A	1.0464 [1.0000]	104.6% { 126.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 153306	(8.69 , N/A) (N/A , 0.02 , N/A)	274.9	N/A	1.1282 [1.0000]	112.8% { 130.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

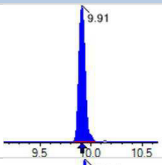
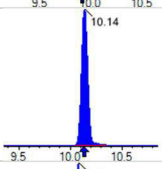
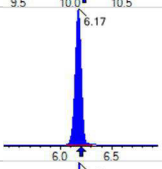
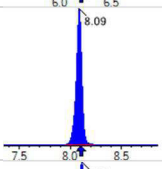
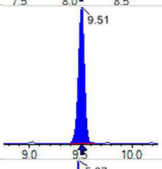
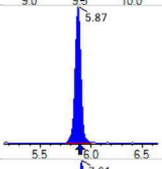
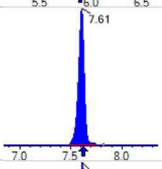
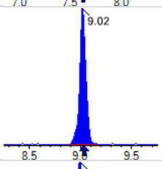
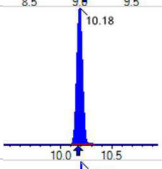
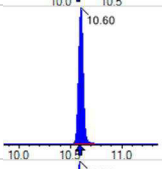
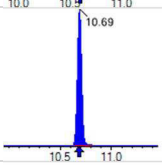
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 142463	(9.37 , N/A) (N/A , 0.03 , N/A)	278.6	N/A	1.0267 [1.0000]	102.7% { 108.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 312677	(8.09 , N/A) (N/A , 0.03 , N/A)	758.9	N/A	0.9688 [1.0000]	96.9% { 110.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 255624	(9.51 , N/A) (N/A , 0.02 , N/A)	590.4	N/A	1.0151 [1.0000]	101.5% { 100.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 664995	(3.75 , N/A) (N/A , 0.03 , N/A)	885.5	N/A	8.8109 [8.0000]	110.1% { 103.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 378689	(5.07 , N/A) (N/A , 0.04 , N/A)	788.7	N/A	4.1847 [4.0000]	104.6% { 115.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 293182	(6.21 , N/A) (N/A , 0.04 , N/A)	489.7	N/A	2.1289 [2.0000]	106.4% { 105.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 295220	(7.14 , N/A) (N/A , 0.03 , N/A)	809.1	N/A	2.4695 [2.0000]	123.5% { 127.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 299548	(7.95 , N/A) (N/A , 0.03 , N/A)	546.8	N/A	2.1386 [2.0000]	106.9% { 129.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 114704	(8.69 , N/A) (N/A , 0.03 , N/A)	287.6	N/A	0.9711 [1.0000]	97.1% { 111.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 144918	(9.37 , N/A) (N/A , 0.02 , N/A)	328.9	N/A	1.0607 [1.0000]	106.1% { 118.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 218176	(9.74 , N/A) (N/A , 0.01 , N/A)	312.7	N/A	1.1627 [1.0000]	116.3% { 124.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

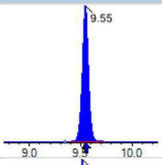
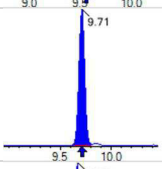
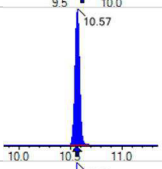
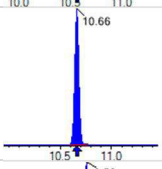
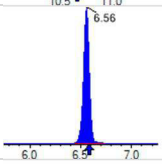
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 261951	(9.91 , N/A) (N/A , 0.01 , N/A)	534.3	N/A	1.1351 [1.0000]	113.5% { 125.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 176447	(10.14 , N/A) (N/A , 0.00 , N/A)	584.1	N/A	1.2178 [1.0000]	121.8% { 130.8% }			
13C3_PFBS_EIS	(302.0 / 80.0) 752812	(6.17 , N/A) (N/A , 0.03 , N/A)	760.0	N/A	2.0925 [2.0000]	104.6% { 110.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 447749	(8.09 , N/A) (N/A , 0.03 , N/A)	867.6	N/A	2.2114 [2.0000]	110.6% { 118.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 690330	(9.51 , N/A) (N/A , 0.01 , N/A)	462.3	N/A	2.1690 [2.0000]	108.5% { 116.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 78484	(5.87 , N/A) (N/A , 0.04 , N/A)	500.6	N/A	3.7325 [4.0000]	93.3% { 104.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 118356	(7.61 , N/A) (N/A , 0.03 , N/A)	568.3	N/A	4.6035 [4.0000]	115.1% { 117.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 97302	(9.02 , N/A) (N/A , 0.02 , N/A)	464.8	N/A	3.7934 [4.0000]	94.8% { 100.3% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1076678	(10.18 , N/A) (N/A , 0.01 , N/A)	700.9	N/A	2.2365 [2.0000]	111.8% { 121.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 249249	(10.60 , N/A) (N/A , 0.00 , N/A)	735.8	N/A	2.0170 [2.0000]	100.9% { 106.6% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 232935	(10.69 , N/A) (N/A , 0.00 , N/A)	1056.0	N/A	2.1726 [2.0000]	108.6% { 123.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (24)
Acquired: 2022/12/14 - 16:13

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 303729	(9.55 , N/A) (N/A , 0.02 , N/A)	542.9	N/A	4.0320 [4.0000]	100.8% { 119.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 324451	(9.71 , N/A) (N/A , 0.01 , N/A)	332.2	N/A	4.7600 [4.0000]	119.0% { 132.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 570393	(10.57 , N/A) (N/A , 0.00 , N/A)	1024.2	N/A	24.0770 [20.0000]	120.4% { 140.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 288521	(10.66 , N/A) (N/A , 0.00 , N/A)	1538.8	N/A	24.3053 [20.0000]	121.5% { 132.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 847018	(6.56 , N/A) (N/A , 0.03 , N/A)	1152.8	N/A	10.0409 [8.0000]	125.5% { 127.5% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV3	PFBA	8.00	7.73	96.6	ng/mL	+/- 30.00%
	PFPEA	4.00	3.80	94.9	ng/mL	+/- 30.00%
	PFHXA	2.00	2.14	107	ng/mL	+/- 30.00%
	PFHPA	2.00	2.12	106	ng/mL	+/- 30.00%
	PFOA	2.00	1.99	99.4	ng/mL	+/- 30.00%
	PFNA	2.00	1.88	93.9	ng/mL	+/- 30.00%
	PFDA	2.00	2.16	108	ng/mL	+/- 30.00%
	PFUnA	2.00	2.14	107	ng/mL	+/- 30.00%
	PFDOA	2.00	1.92	95.9	ng/mL	+/- 30.00%
	PFTRDA	2.00	1.95	97.5	ng/mL	+/- 30.00%
	PFTEDA	2.00	2.27	114	ng/mL	+/- 30.00%
	PFBS	1.77	1.63	92.1	ng/mL	+/- 30.00%
	PFPES	1.88	2.00	106	ng/mL	+/- 30.00%
	PFHXS	1.83	1.85	101	ng/mL	+/- 30.00%
	PFHPS	1.91	1.75	91.6	ng/mL	+/- 30.00%
	PFOS	1.86	1.81	97.1	ng/mL	+/- 30.00%
	PFNS	1.92	1.86	96.9	ng/mL	+/- 30.00%
	PFDS	1.93	1.92	99.3	ng/mL	+/- 30.00%
	PFDOS	1.94	1.92	99.0	ng/mL	+/- 30.00%
	4:2FTS	7.50	7.52	100	ng/mL	+/- 30.00%
	6:2FTS	7.60	7.54	99.3	ng/mL	+/- 30.00%
	8:2FTS	7.68	8.95	117	ng/mL	+/- 30.00%
	PFOSA	2.00	2.09	105	ng/mL	+/- 30.00%
	NMeFOSA	8.00	8.54	107	ng/mL	+/- 30.00%
	NEtFOSA	8.00	8.26	103	ng/mL	+/- 30.00%
	NMeFOSAA	2.00	1.93	96.7	ng/mL	+/- 30.00%
	NEtFOSAA	2.00	2.11	106	ng/mL	+/- 30.00%
	NMeFOSE	8.00	7.91	98.9	ng/mL	+/- 30.00%
	NEtFOSE	8.00	7.93	99.1	ng/mL	+/- 30.00%
	HFPO-DA	4.00	4.49	112	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

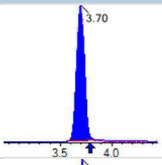
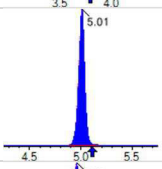
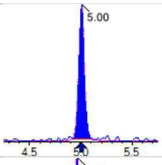
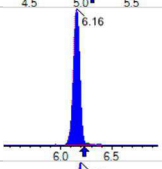
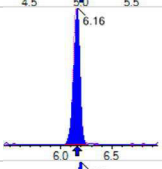
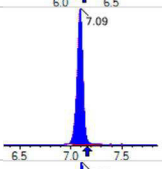
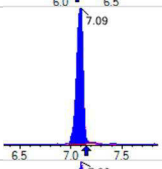
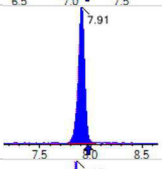
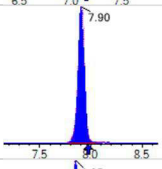
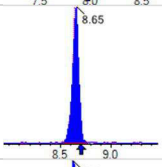
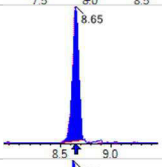
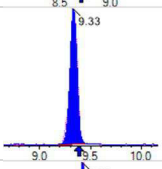
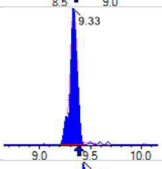
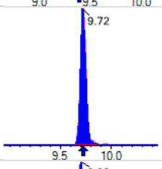
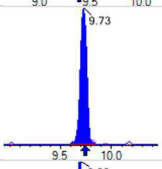
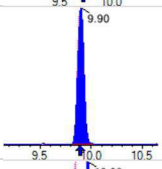
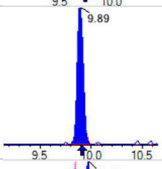
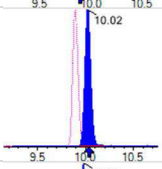
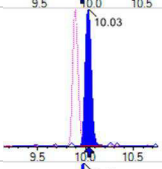
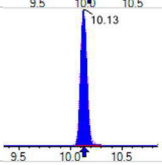
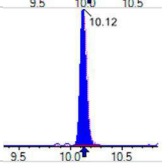
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV3	ADONA	3.78	3.93	104	ng/mL	+/- 30.00%
	PFEESA	3.56	3.76	106	ng/mL	+/- 30.00%
	PFMPA	4.00	3.78	94.5	ng/mL	+/- 30.00%
	PFMBA	4.00	3.87	96.8	ng/mL	+/- 30.00%
	NFDHA	4.00	4.84	121	ng/mL	+/- 30.00%
	9CL-PF3ONS	3.74	3.99	107	ng/mL	+/- 30.00%
	11CL-PF3OUDS	3.78	4.17	110	ng/mL	+/- 30.00%
	3:3FTCA	8.00	8.47	106	ng/mL	+/- 30.00%
	5:3FTCA	8.00	8.50	106	ng/mL	+/- 30.00%
	7:3FTCA	8.00	8.51	106	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

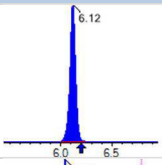
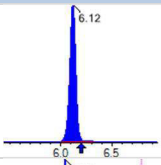
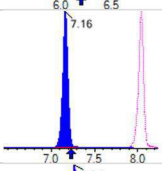
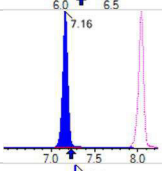
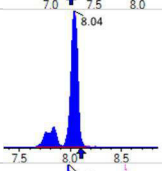
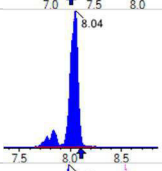
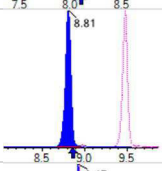
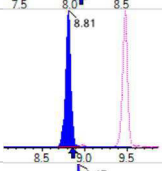
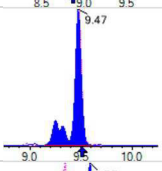
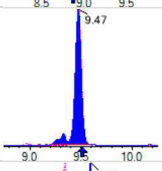
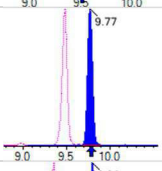
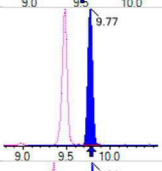
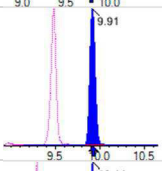
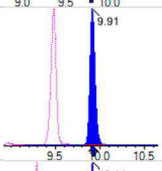
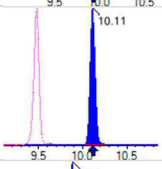
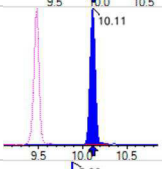
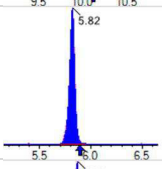
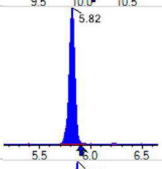
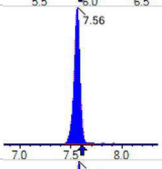
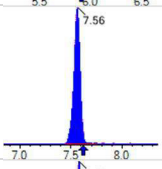
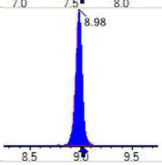
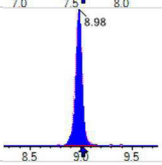
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 481915	(3.70 , 1.00) (0.00 , N/A , 0.0)	60.0	N/A 0.0 0.0	7.7313 [8.0000]	96.6%			
PFPeA	(262.9 / 219.0) 321883 (262.9 / 69.0) 4123	(5.01 , 1.00) (0.00 , N/A , 0.2)	626.5 137.2	0.0128 102.0 109.1	3.7973 [4.0000]	94.9%			
PFHxA	(313.0 / 269.0) 267389 (313.0 / 119.0) 27476	(6.16 , 1.00) (0.01 , N/A , -0.2)	570.7 271.4	0.1028 111.0 96.5	2.1363 [2.0000]	106.8%			
PFHpA	(363.0 / 319.0) 252320 (363.0 / 169.0) 68808	(7.09 , 1.00) (0.00 , N/A , 0.1)	454.5 393.7	0.2727 87.6 84.2	2.1248 [2.0000]	106.2%			
PFOA	(413.0 / 369.0) 257208 (413.0 / 169.0) 86040	(7.91 , 1.00) (0.00 , N/A , 0.3)	449.1 529.4	0.3345 99.7 114.8	1.9878 [2.0000]	99.4%			
PFNA	(463.0 / 419.0) 191080 (463.0 / 169.0) 38633	(8.65 , 1.00) (0.00 , N/A , 0.0)	383.1 95.9	0.2022 115.2 99.1	1.8788 [2.0000]	93.9%			
PFDA	(513.0 / 469.0) 276792 (513.0 / 169.0) 28887	(9.33 , 1.00) (0.00 , N/A , -0.1)	349.9 182.4	0.1044 103.7 79.7	2.1620 [2.0000]	108.1%			
PFUnA	(563.0 / 519.0) 334181 (563.0 / 169.0) 30506	(9.72 , 1.00) (0.00 , N/A , -0.4)	568.3 237.1	0.0913 99.7 105.2	2.1351 [2.0000]	106.8%			
PFDoA	(613.0 / 569.0) 372032 (613.0 / 169.0) 43219	(9.90 , 1.00) (0.01 , N/A , 0.4)	551.7 173.2	0.1162 90.6 81.6	1.9174 [2.0000]	95.9%			
PFTrDA	(663.0 / 619.0) 311821 (663.0 / 169.0) 50171	(10.02 , 1.01) (N/A , -0.01 , -0.2)	548.2 176.2	0.1609 73.3 69.8	1.9493 [2.0000]	97.5%			
PFTeDA	(713.0 / 669.0) 293668 (713.0 / 169.0) 57677	(10.13 , 1.00) (0.00 , N/A , 0.5)	621.1 227.0	0.1964 105.6 111.9	2.2722 [2.0000]	113.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

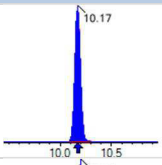
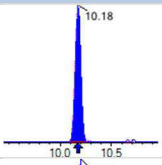
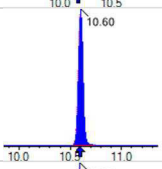
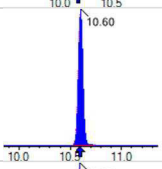
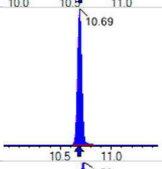
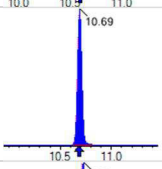
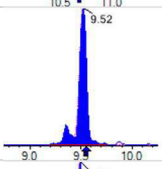
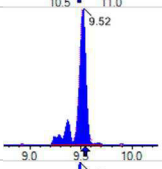
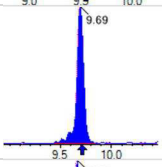
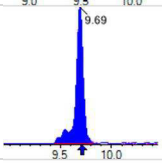
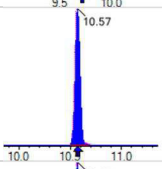
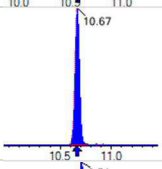
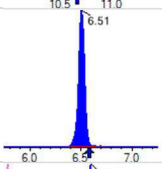
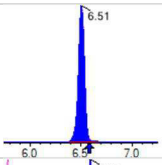
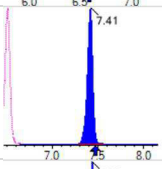
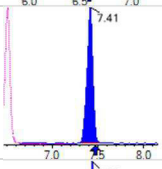
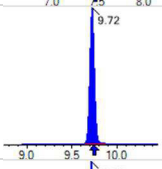
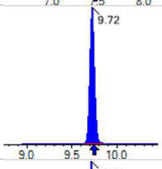
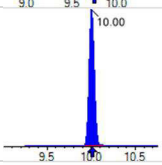
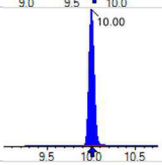
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 350234 (298.9 / 99.0) 220603	(6.12 , 1.00) (0.00 , N/A , 0.0)	617.7 479.1	0.6299 87.4 94.8	1.6310 [1.7695]	92.2%			
PFPeS	(349.0 / 80.0) 683163 (349.0 / 99.0) 253458	(7.16 , 0.89) (N/A , -0.02 , 0.1)	777.1 648.1	0.3710 99.1 99.1	1.9985 [1.8768]	106.5%			
PFHxS	(399.0 / 80.0) 576261 (399.0 / 99.0) 190814	(8.04 , 1.00) (0.00 , N/A , 0.1)	3980.6 380521.3	0.3311 102.7 95.7	1.8468 [1.8220]	101.4%			
PFHpS	(449.0 / 80.0) 524792 (449.0 / 99.0) 149372	(8.81 , 0.93) (N/A , -0.02 , -0.1)	623.1 588.1	0.2846 92.7 95.2	1.7500 [1.9028]	92.0%			
PFOS	(499.0 / 80.0) 657900 (499.0 / 99.0) 156824	(9.47 , 1.00) (0.00 , N/A , 0.0)	124.7 139.1	0.2384 103.9 93.5	1.8053 [1.8550]	97.3%			
PFNS	(549.0 / 80.0) 835259 (549.0 / 99.0) 192284	(9.77 , 1.03) (N/A , -0.01 , -0.1)	926.6 684.0	0.2302 88.8 97.2	1.8602 [1.9198]	96.9%			
PFDS	(599.0 / 80.0) 1131673 (599.0 / 99.0) 260162	(9.91 , 1.05) (N/A , -0.01 , 0.0)	902.1 527.5	0.2299 102.1 93.2	1.9171 [1.9262]	99.5%			
PFDoS	(698.9 / 80.0) 573519 (698.9 / 99.0) 129574	(10.11 , 1.07) (N/A , -0.01 , -0.1)	936.0 429.5	0.2259 111.6 112.0	1.9206 [1.9391]	99.0%			
4:2FTS	(327.0 / 307.0) 530784 (327.0 / 81.0) 298465	(5.82 , 1.00) (0.00 , N/A , 0.1)	790.5 547.3	0.5623 92.7 98.5	7.5218 [7.4762]	100.6%			
6:2FTS	(427.0 / 407.0) 329124 (427.0 / 81.0) 239545	(7.56 , 1.00) (0.00 , N/A , 0.1)	733.1 593.2	0.7278 112.0 98.1	7.5432 [7.5923]	99.4%			
8:2FTS	(527.0 / 507.0) 288168 (527.0 / 81.0) 171958	(8.98 , 1.00) (0.00 , N/A , 0.1)	565.3 418.1	0.5967 95.2 86.7	8.9530 [7.6663]	116.8%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

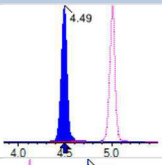
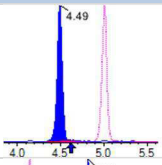
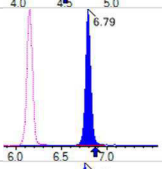
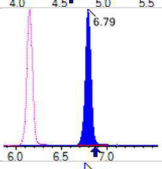
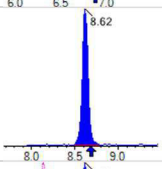
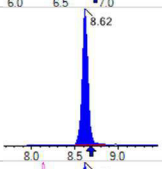
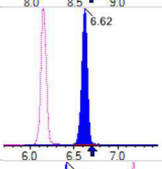
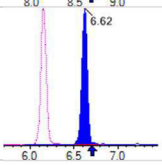
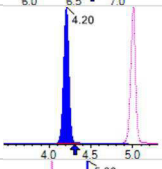
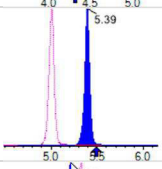
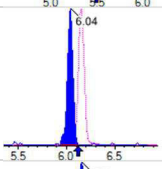
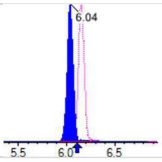
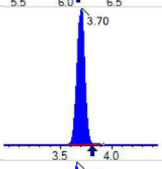
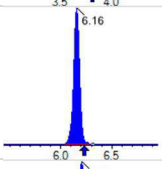
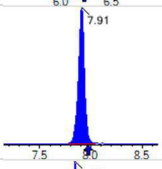
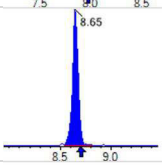
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 949427 (498.0 / 478.0) 26168	(10.17 , 1.00) (0.00 , N/A , -0.3)	924.3 3161.0	0.0276 121.1 99.7	2.0924 [2.0000]	104.6%			
NMeFOSA	(511.9 / 219.0) 911267 (511.9 / 169.0) 620561	(10.60 , 1.00) (0.00 , N/A , 0.1)	1236.0 944.1	0.6810 106.7 106.7	8.5429 [8.0000]	106.8%			
NEtFOSA	(526.0 / 219.0) 853071 (526.0 / 169.0) 858551	(10.69 , 1.00) (0.00 , N/A , 0.0)	1969.8 1697.9	1.0064 94.3 92.7	8.2596 [8.0000]	103.2%			
NMeFOSAA	(570.0 / 419.0) 115043 (570.0 / 483.0) 63858	(9.52 , 1.00) (0.01 , N/A , 0.1)	318.5 609.2	0.5551 96.7 106.2	1.9336 [2.0000]	96.7%			
NEtFOSAA	(584.0 / 419.0) 124091 (584.0 / 526.0) 75212	(9.69 , 1.00) (0.00 , N/A , 0.3)	390.9 7438.2	0.6061 106.9 102.8	2.1106 [2.0000]	105.5%			
NMeFOSE	(616.1 / 59.0) 264445	(10.57 , 1.00) (0.01 , N/A , 0.0)	816.7	N/A 0.0 0.0	7.9123 [8.0000]	98.9%			
NEtFOSE	(630.0 / 59.0) 68588	(10.67 , 1.00) (0.00 , N/A , 0.0)	925.0	N/A 0.0 0.0	7.9269 [8.0000]	99.1%			
HFPO-DA	(285.0 / 169.0) 253372 (285.0 / 185.0) 766390	(6.51 , 1.00) (0.00 , N/A , 0.1)	818.0 1155.9	3.0248 115.0 103.2	4.4891 [4.0000]	112.2%			
ADONA	(377.0 / 85.0) 946703 (377.0 / 251.0) 122217	(7.41 , 1.14) (N/A , -0.01 , 0.0)	882.3 373.5	0.1291 109.5 120.2	3.9332 [3.7708]	104.3%			
9Cl-Pf3ONS	(531.0 / 351.0) 2721079 (533.0 / 353.0) 886535	(9.72 , 1.49) (N/A , -0.01 , 0.0)	928.1 846.2	0.3258 112.4 104.5	3.9871 [3.7330]	106.8%			
11Cl-PF3OUDS	(631.0 / 451.0) 1825561 (633.0 / 453.0) 636817	(10.00 , 1.54) (N/A , -0.01 , 0.1)	979.4 882.0	0.3488 110.6 100.7	4.1740 [3.7728]	110.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

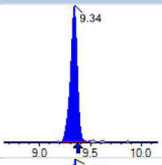
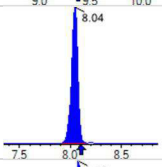
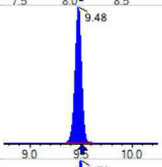
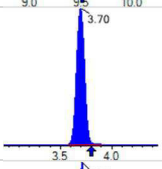
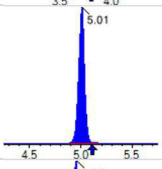
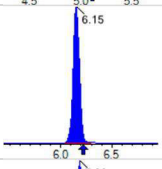
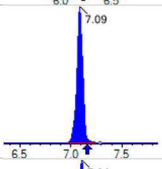
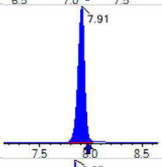
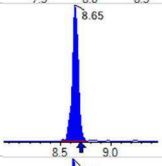
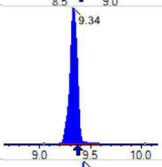
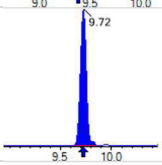
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 30178 (241.0 / 117.0) 49168	(4.49 , 0.90) (N/A , -0.02 , 0.1)	446.6 444.4	1.6293 99.4 88.8	8.4712 [8.0000]	105.9%			
5:3FTCA	(341.0 / 236.7) 212805 (341.0 / 217.0) 371354	(6.79 , 1.10) (N/A , -0.02 , -0.1)	538.3 545.4	1.7450 110.7 112.8	8.4968 [8.0000]	106.2%			
7:3FTCA	(441.0 / 317.0) 266805 (441.0 / 337.0) 229733	(8.62 , 1.40) (N/A , -0.02 , 0.1)	396.2 418.4	0.8611 102.8 106.2	8.5142 [8.0000]	106.4%			
PFEESA	(315.0 / 135.0) 512043 (315.0 / 83.0) 152316	(6.62 , 1.08) (N/A , -0.03 , 0.0)	765.1 510.8	0.2975 97.0 97.0	3.7566 [3.5698]	105.2%			
PFMPA	(229.0 / 85.0) 87006	(4.20 , 0.84) (N/A , -0.02 , 0.0)	976.3	N/A 0.0 0.0	3.7813 [4.0000]	94.5%			
PFMBA	(279.0 / 85.0) 298028	(5.39 , 1.08) (N/A , -0.02 , 0.0)	825.6	N/A 0.0 0.0	3.8701 [4.0000]	96.8%			
NFDHA	(201.0 / 85.0) 12609 (295.0 / 201.0) 85414	(6.04 , 0.98) (N/A , -0.02 , 0.0)	267.3 593.3	6.7742 102.8 93.5	4.8441 [4.0000]	121.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 111854	(3.70 , N/A) (N/A , -0.01 , N/A)	818.5	N/A	0.9219 [1.0000]	92.2% { 116.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 181331	(6.16 , N/A) (N/A , -0.02 , N/A)	491.1	N/A	0.9937 [1.0000]	99.4% { 103.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 186735	(7.91 , N/A) (N/A , -0.01 , N/A)	609.6	N/A	1.0697 [1.0000]	107.0% { 128.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 139119	(8.65 , N/A) (N/A , -0.02 , N/A)	345.6	N/A	1.0238 [1.0000]	102.4% { 118.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

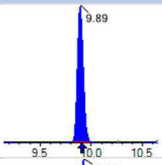
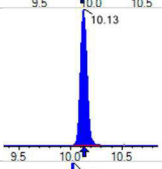
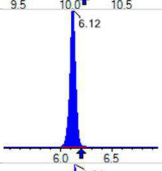
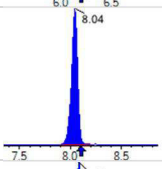
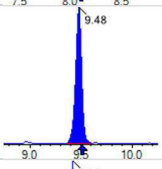
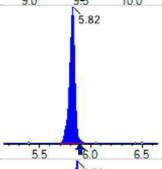
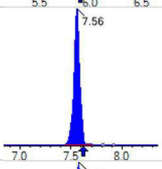
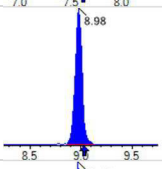
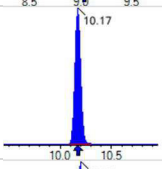
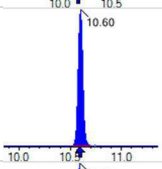
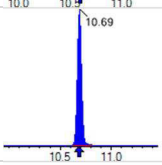
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 130065	(9.34 , N/A) (N/A , -0.01 , N/A)	308.9	N/A	0.9374 [1.0000]	93.7% { 99.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 278794	(8.04 , N/A) (N/A , -0.02 , N/A)	716.0	N/A	0.8638 [1.0000]	86.4% { 98.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 304390	(9.48 , N/A) (N/A , -0.02 , N/A)	454.7	N/A	1.2088 [1.0000]	120.9% { 119.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 709892	(3.70 , N/A) (N/A , -0.02 , N/A)	819.8	N/A	8.3260 [8.0000]	104.1% { 110.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 381981	(5.01 , N/A) (N/A , -0.02 , N/A)	907.5	N/A	3.8039 [4.0000]	95.1% { 116.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 282481	(6.15 , N/A) (N/A , -0.02 , N/A)	639.7	N/A	1.8485 [2.0000]	92.4% { 102.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 256625	(7.09 , N/A) (N/A , -0.02 , N/A)	532.8	N/A	1.9345 [2.0000]	96.7% { 110.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 258963	(7.91 , N/A) (N/A , -0.02 , N/A)	478.8	N/A	1.8086 [2.0000]	90.4% { 111.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 111559	(8.65 , N/A) (N/A , -0.02 , N/A)	332.4	N/A	1.0408 [1.0000]	104.1% { 108.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 126614	(9.34 , N/A) (N/A , -0.01 , N/A)	334.6	N/A	1.0150 [1.0000]	101.5% { 103.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 180428	(9.72 , N/A) (N/A , -0.01 , N/A)	437.3	N/A	1.0531 [1.0000]	105.3% { 103.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

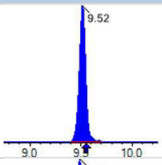
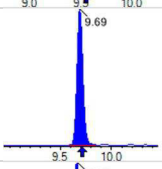
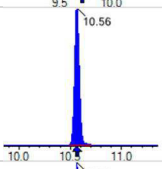
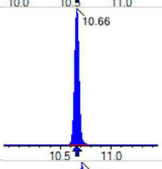
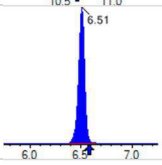
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 224049	(9.89 , N/A) (N/A , -0.01 , N/A)	482.0	N/A	1.0634 [1.0000]	106.3% { 107.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 141425	(10.13 , N/A) (N/A , -0.01 , N/A)	458.4	N/A	1.0691 [1.0000]	106.9% { 104.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 760091	(6.12 , N/A) (N/A , -0.03 , N/A)	889.3	N/A	2.3695 [2.0000]	118.5% { 111.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 388563	(8.04 , N/A) (N/A , -0.02 , N/A)	744.2	N/A	2.1524 [2.0000]	107.6% { 102.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 662827	(9.48 , N/A) (N/A , -0.01 , N/A)	364.9	N/A	1.7490 [2.0000]	87.4% { 111.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 86566	(5.82 , N/A) (N/A , -0.01 , N/A)	525.9	N/A	4.6172 [4.0000]	115.4% { 115.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 107076	(7.56 , N/A) (N/A , -0.02 , N/A)	569.5	N/A	4.6710 [4.0000]	116.8% { 106.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 90401	(8.98 , N/A) (N/A , -0.02 , N/A)	356.5	N/A	3.9527 [4.0000]	98.8% { 93.2% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 925164	(10.17 , N/A) (N/A , 0.00 , N/A)	928.8	N/A	1.6139 [2.0000]	80.7% { 104.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 256433	(10.60 , N/A) (N/A , 0.00 , N/A)	814.5	N/A	1.7427 [2.0000]	87.1% { 109.6% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 223465	(10.69 , N/A) (N/A , 0.00 , N/A)	1034.4	N/A	1.7504 [2.0000]	87.5% { 118.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (38)
Acquired: 2022/12/14 - 19:11

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 307870	(9.52 , N/A) (N/A , -0.01 , N/A)	730.4	N/A	3.4322 [4.0000]	85.8% { 121.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 270154	(9.69 , N/A) (N/A , -0.01 , N/A)	264.9	N/A	3.3284 [4.0000]	83.2% { 110.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 495454	(10.56 , N/A) (N/A , 0.00 , N/A)	828.3	N/A	17.5631 [20.0000]	87.8% { 122.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 255786	(10.66 , N/A) (N/A , 0.00 , N/A)	1029.0	N/A	18.0956 [20.0000]	90.5% { 117.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 730152	(6.51 , N/A) (N/A , -0.01 , N/A)	945.9	N/A	7.8001 [8.0000]	97.5% { 109.9% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV4	PFBA	8.00	7.84	98.0	ng/mL	+/- 30.00%
	PFPEA	4.00	4.13	103	ng/mL	+/- 30.00%
	PFHXA	2.00	2.11	105	ng/mL	+/- 30.00%
	PFHPA	2.00	2.05	102	ng/mL	+/- 30.00%
	PFOA	2.00	2.10	105	ng/mL	+/- 30.00%
	PFNA	2.00	1.86	93.0	ng/mL	+/- 30.00%
	PFDA	2.00	1.72	86.2	ng/mL	+/- 30.00%
	PFUnA	2.00	2.09	105	ng/mL	+/- 30.00%
	PFDOA	2.00	2.10	105	ng/mL	+/- 30.00%
	PFTRDA	2.00	2.42	121	ng/mL	+/- 30.00%
	PFTEDA	2.00	1.85	92.7	ng/mL	+/- 30.00%
	PFBS	1.77	1.98	112	ng/mL	+/- 30.00%
	PFPES	1.88	1.94	103	ng/mL	+/- 30.00%
	PFHXS	1.83	1.85	101	ng/mL	+/- 30.00%
	PFHPS	1.91	1.58	82.9	ng/mL	+/- 30.00%
	PFOS	1.86	1.83	98.3	ng/mL	+/- 30.00%
	PFNS	1.92	1.59	82.7	ng/mL	+/- 30.00%
	PFDS	1.93	1.66	86.3	ng/mL	+/- 30.00%
	PFDOS	1.94	1.94	100	ng/mL	+/- 30.00%
	4:2FTS	7.50	7.90	105	ng/mL	+/- 30.00%
	6:2FTS	7.60	6.93	91.1	ng/mL	+/- 30.00%
	8:2FTS	7.68	9.09	118	ng/mL	+/- 30.00%
	PFOSA	2.00	1.82	91.1	ng/mL	+/- 30.00%
	NMeFOSA	8.00	8.76	109	ng/mL	+/- 30.00%
	NEtFOSA	8.00	8.40	105	ng/mL	+/- 30.00%
	NMeFOSAA	2.00	2.00	100	ng/mL	+/- 30.00%
	NEtFOSAA	2.00	1.99	99.7	ng/mL	+/- 30.00%
	NMeFOSE	8.00	8.00	100	ng/mL	+/- 30.00%
	NEtFOSE	8.00	7.99	99.8	ng/mL	+/- 30.00%
	HFPO-DA	4.00	3.85	96.1	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0071
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251013
Standard ID:	22L0179	Sequence:	SB03835

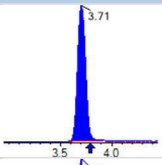
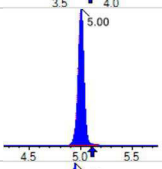
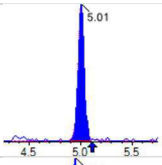
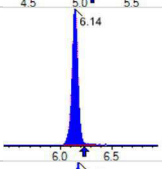
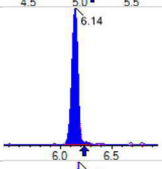
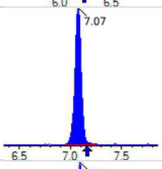
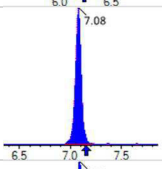
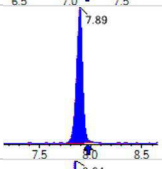
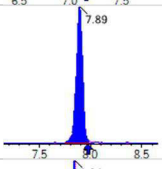
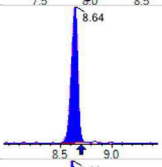
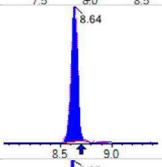
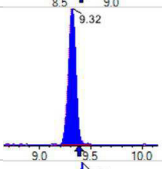
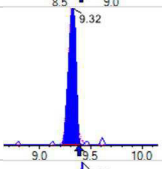
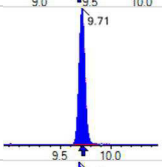
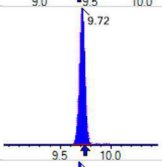
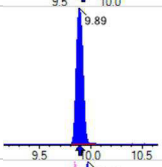
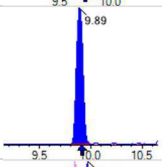
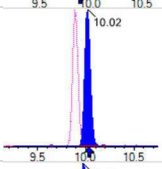
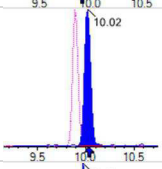
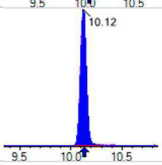
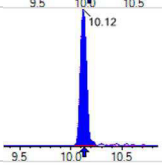
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03835-CCV4	ADONA	3.78	3.87	102	ng/mL	+/- 30.00%
	PFEESA	3.56	3.76	106	ng/mL	+/- 30.00%
	PFMPA	4.00	3.99	99.7	ng/mL	+/- 30.00%
	PFMBA	4.00	4.04	101	ng/mL	+/- 30.00%
	NFDHA	4.00	4.37	109	ng/mL	+/- 30.00%
	9CL-PF3ONS	3.74	3.91	105	ng/mL	+/- 30.00%
	11CL-PF3OUDS	3.78	3.90	103	ng/mL	+/- 30.00%
	3:3FTCA	8.00	8.57	107	ng/mL	+/- 30.00%
	5:3FTCA	8.00	8.05	101	ng/mL	+/- 30.00%
	7:3FTCA	8.00	8.68	108	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 450871	(3.71 , 1.00) (0.00 , N/A , 0.0)	66.4	N/A 0.0 0.0	7.8414 [8.0000]	98.0%			
PFPeA	(262.9 / 219.0) 327381 (262.9 / 69.0) 3918	(5.00 , 1.00) (0.00 , N/A , -0.1)	755.3 153.9	0.0120 95.3 101.9	4.1292 [4.0000]	103.2%			
PFHxA	(313.0 / 269.0) 269243 (313.0 / 119.0) 26583	(6.14 , 1.00) (0.00 , N/A , 0.0)	561.6 264.0	0.0987 106.6 92.7	2.1098 [2.0000]	105.5%			
PFHpA	(363.0 / 319.0) 237502 (363.0 / 169.0) 71835	(7.07 , 1.00) (0.00 , N/A , -0.2)	450.3 449.1	0.3025 97.2 93.4	2.0454 [2.0000]	102.3%			
PFOA	(413.0 / 369.0) 255526 (413.0 / 169.0) 80297	(7.89 , 1.00) (0.00 , N/A , 0.0)	450.7 574.2	0.3142 93.6 107.9	2.1024 [2.0000]	105.1%			
PFNA	(463.0 / 419.0) 191619 (463.0 / 169.0) 41576	(8.64 , 1.00) (0.00 , N/A , 0.1)	368.8 79.6	0.2170 123.6 106.4	1.8598 [2.0000]	93.0%			
PFDA	(513.0 / 469.0) 243922 (513.0 / 169.0) 26582	(9.32 , 1.00) (0.00 , N/A , -0.1)	374.6 176.1	0.1090 108.3 83.2	1.7244 [2.0000]	86.2%			
PFUnA	(563.0 / 519.0) 320256 (563.0 / 169.0) 31255	(9.71 , 1.00) (0.00 , N/A , -0.3)	431.5 793136.8	0.0976 106.6 112.4	2.0941 [2.0000]	104.7%			
PFDoA	(613.0 / 569.0) 392395 (613.0 / 169.0) 49437	(9.89 , 1.00) (0.00 , N/A , 0.0)	487.1 197.1	0.1260 98.3 88.5	2.1030 [2.0000]	105.1%			
PFTrDA	(663.0 / 619.0) 372363 (663.0 / 169.0) 61815	(10.02 , 1.01) (N/A , -0.01 , 0.0)	556.6 267.2	0.1660 75.6 72.0	2.4206 [2.0000]	121.0%			
PFTeDA	(713.0 / 669.0) 274126 (713.0 / 169.0) 60536	(10.12 , 1.00) (0.00 , N/A , 0.0)	444.5 205.7	0.2208 118.7 125.8	1.8542 [2.0000]	92.7%			

APPL
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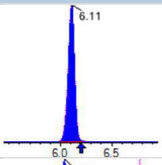
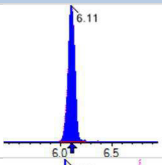
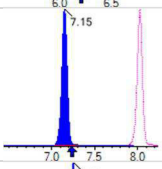
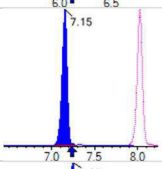
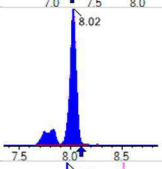
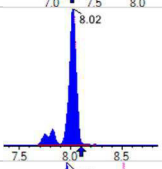
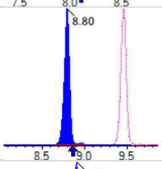
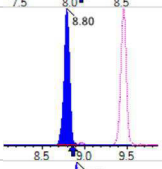
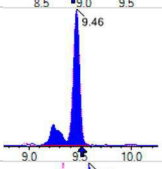
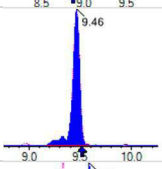
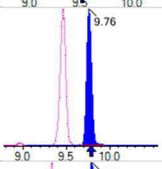
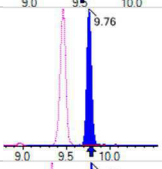
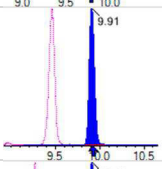
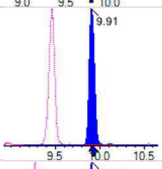
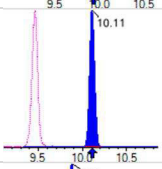
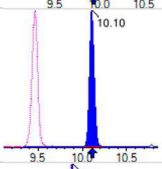
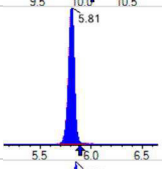
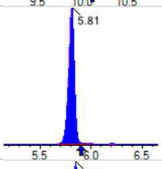
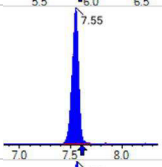
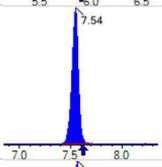
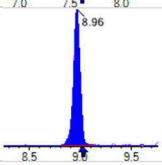
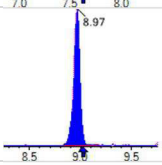
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

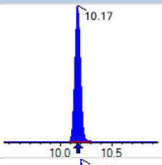
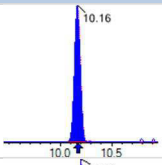
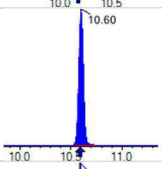
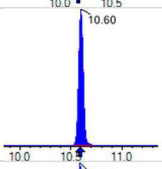
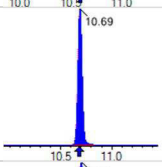
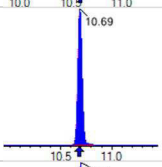
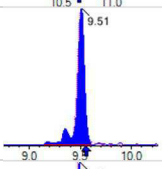
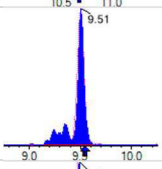
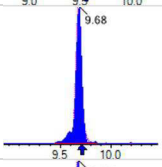
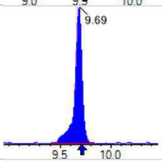
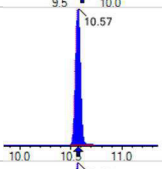
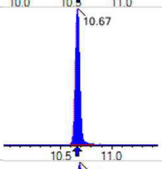
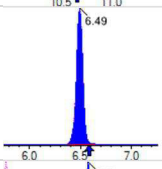
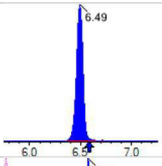
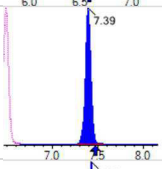
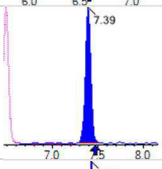
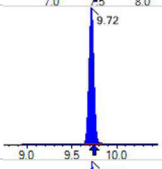
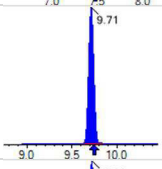
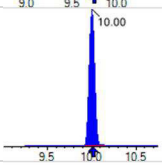
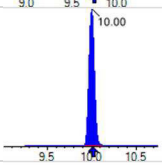
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 377744 (298.9 / 99.0) 246677	(6.11 , 1.00) (0.00 , N/A , 0.0)	872.9 590.6	0.6530 90.7 98.2	1.9782 [1.7695]	111.8%			
PFPeS	(349.0 / 80.0) 657051 (349.0 / 99.0) 230429	(7.15 , 0.89) (N/A , -0.04 , -0.2)	743.4 550.4	0.3507 93.6 93.7	1.9448 [1.8768]	103.6%			
PFHxS	(399.0 / 80.0) 570135 (399.0 / 99.0) 189905	(8.02 , 1.00) (0.00 , N/A , 0.2)	48713.5 7610.1	0.3331 103.3 96.3	1.8487 [1.8220]	101.5%			
PFHpS	(449.0 / 80.0) 484786 (449.0 / 99.0) 139707	(8.80 , 0.93) (N/A , -0.03 , 0.1)	389.7 533.9	0.2882 93.9 96.4	1.5830 [1.9028]	83.2%			
PFOS	(499.0 / 80.0) 680127 (499.0 / 99.0) 164956	(9.46 , 1.00) (0.00 , N/A , 0.0)	145.4 161.5	0.2425 105.7 95.1	1.8275 [1.8550]	98.5%			
PFNS	(549.0 / 80.0) 727887 (549.0 / 99.0) 204776	(9.76 , 1.03) (N/A , -0.02 , 0.0)	626.3 489.0	0.2813 108.5 118.8	1.5874 [1.9198]	82.7%			
PFDS	(599.0 / 80.0) 1003674 (599.0 / 99.0) 250942	(9.91 , 1.05) (N/A , -0.01 , 0.0)	651.2 434.5	0.2500 111.1 101.4	1.6649 [1.9262]	86.4%			
PFDoS	(698.9 / 80.0) 592197 (698.9 / 99.0) 147587	(10.11 , 1.07) (N/A , -0.01 , 0.2)	1035.6 505.6	0.2492 123.1 123.5	1.9419 [1.9391]	100.1%			
4:2FTS	(327.0 / 307.0) 489799 (327.0 / 81.0) 309933	(5.81 , 1.00) (0.00 , N/A , -0.1)	878.6 602.0	0.6328 104.3 110.8	7.9009 [7.4762]	105.7%			
6:2FTS	(427.0 / 407.0) 317645 (427.0 / 81.0) 208806	(7.55 , 1.00) (0.00 , N/A , 0.2)	739.4 693.4	0.6574 101.2 88.6	6.9261 [7.5923]	91.2%			
8:2FTS	(527.0 / 507.0) 280993 (527.0 / 81.0) 186284	(8.96 , 1.00) (0.00 , N/A , -0.2)	353.6 376.2	0.6630 105.7 96.4	9.0917 [7.6663]	118.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

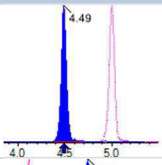
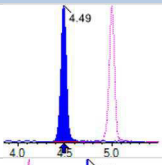
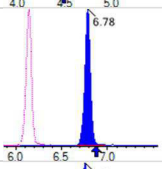
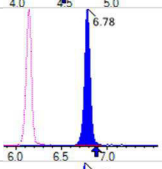
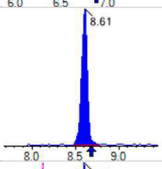
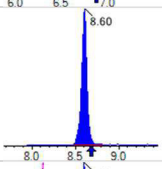
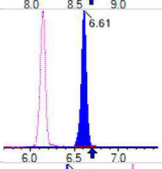
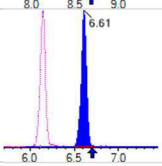
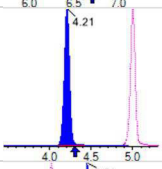
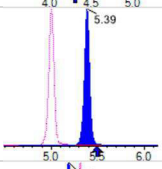
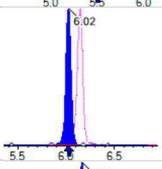
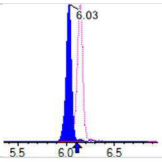
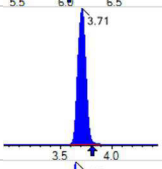
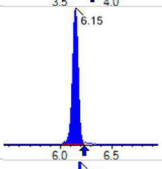
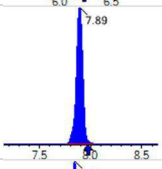
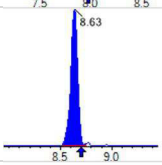
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 955187 (498.0 / 478.0) 22849	(10.17 , 1.00) (0.00 , N/A , 0.2)	954.0 1204.7	0.0239 105.1 86.6	1.8214 [2.0000]	91.1%			
NMeFOSA	(511.9 / 219.0) 926927 (511.9 / 169.0) 632587	(10.60 , 1.00) (0.00 , N/A , 0.1)	1050.7 1277.3	0.6825 107.0 106.9	8.7588 [8.0000]	109.5%			
NEtFOSA	(526.0 / 219.0) 878304 (526.0 / 169.0) 890716	(10.69 , 1.00) (0.00 , N/A , 0.0)	1688.8 993.9	1.0141 95.0 93.4	8.4004 [8.0000]	105.0%			
NMeFOSAA	(570.0 / 419.0) 115565 (570.0 / 483.0) 57739	(9.51 , 1.00) (0.01 , N/A , 0.2)	259.7 5541.9	0.4996 87.0 95.6	2.0020 [2.0000]	100.1%			
NEtFOSAA	(584.0 / 419.0) 117225 (584.0 / 526.0) 69707	(9.68 , 1.00) (0.00 , N/A , 0.0)	22370.5 2696.0	0.5946 104.9 100.9	1.9947 [2.0000]	99.7%			
NMeFOSE	(616.1 / 59.0) 269891	(10.57 , 1.00) (0.01 , N/A , 0.0)	810.7	N/A 0.0 0.0	8.0032 [8.0000]	100.0%			
NEtFOSE	(630.0 / 59.0) 70122	(10.67 , 1.00) (0.01 , N/A , 0.0)	887.9	N/A 0.0 0.0	7.9867 [8.0000]	99.8%			
HFPO-DA	(285.0 / 169.0) 205729 (285.0 / 185.0) 632917	(6.49 , 1.00) (0.00 , N/A , -0.1)	824.6 892.6	3.0765 117.0 104.9	3.8454 [4.0000]	96.1%			
ADONA	(377.0 / 85.0) 882497 (377.0 / 251.0) 114663	(7.39 , 1.14) (N/A , -0.03 , 0.0)	763.6 327.5	0.1299 110.2 121.0	3.8681 [3.7708]	102.6%			
9Cl-Pf3ONS	(531.0 / 351.0) 2528669 (533.0 / 353.0) 838276	(9.72 , 1.50) (N/A , -0.01 , 0.2)	812.1 698.4	0.3315 114.3 106.4	3.9089 [3.7330]	104.7%			
11Cl-PF3OUDS	(631.0 / 451.0) 1618135 (633.0 / 453.0) 554865	(10.00 , 1.54) (N/A , -0.01 , 0.2)	1228.1 750.0	0.3429 108.7 99.0	3.9032 [3.7728]	103.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

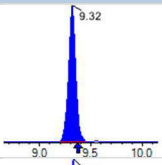
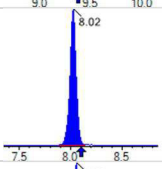
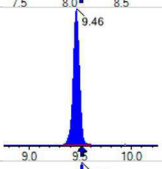
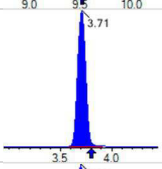
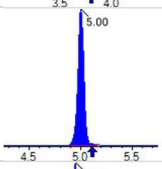
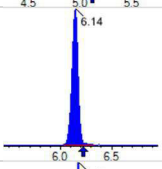
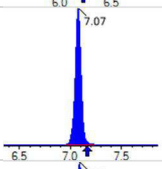
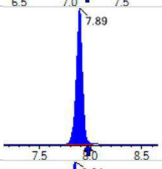
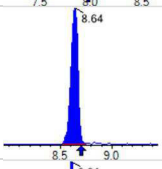
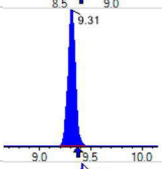
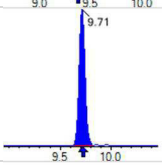
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 28557 (241.0 / 117.0) 50655	(4.49 , 0.90) (N/A , -0.03 , 0.1)	487.6 510.5	1.7738 108.2 96.7	8.5705 [8.0000]	107.1%			
5:3FTCA	(341.0 / 236.7) 205527 (341.0 / 217.0) 340856	(6.78 , 1.10) (N/A , -0.03 , 0.2)	515.8 665.8	1.6584 105.2 107.2	8.0486 [8.0000]	100.6%			
7:3FTCA	(441.0 / 317.0) 277249 (441.0 / 337.0) 201686	(8.61 , 1.40) (N/A , -0.03 , 0.2)	356.1 395.6	0.7275 86.8 89.7	8.6776 [8.0000]	108.5%			
PFEESA	(315.0 / 135.0) 523123 (315.0 / 83.0) 155040	(6.61 , 1.08) (N/A , -0.04 , 0.0)	1151.4 563.0	0.2964 96.7 96.6	3.7642 [3.5698]	105.4%			
PFMPA	(229.0 / 85.0) 85864	(4.21 , 0.84) (N/A , -0.01 , 0.0)	1012.2	N/A 0.0 0.0	3.9897 [4.0000]	99.7%			
PFMBA	(279.0 / 85.0) 291280	(5.39 , 1.08) (N/A , -0.03 , 0.0)	956.8	N/A 0.0 0.0	4.0441 [4.0000]	101.1%			
NFDHA	(201.0 / 85.0) 11617 (295.0 / 201.0) 79678	(6.02 , 0.98) (N/A , -0.04 , -0.4)	254.9 489.3	6.8589 104.1 94.6	4.3653 [4.0000]	109.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 101309	(3.71 , N/A) (N/A , -0.01 , N/A)	971.6	N/A	0.8350 [1.0000]	83.5% { 105.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 173581	(6.15 , N/A) (N/A , -0.03 , N/A)	589.9	N/A	0.9512 [1.0000]	95.1% { 99.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 158748	(7.89 , N/A) (N/A , -0.03 , N/A)	770.9	N/A	0.9094 [1.0000]	90.9% { 109.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 131812	(8.63 , N/A) (N/A , -0.04 , N/A)	422.9	N/A	0.9700 [1.0000]	97.0% { 112.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

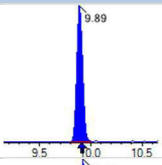
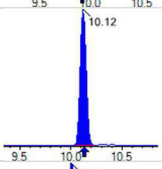
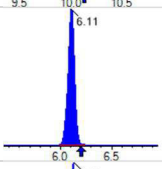
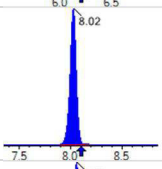
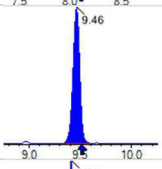
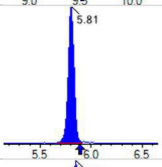
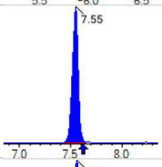
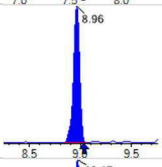
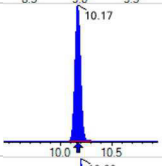
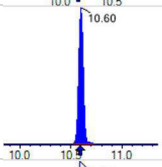
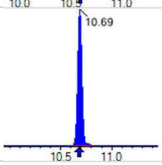
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 147621	(9.32 , N/A) (N/A , -0.03 , N/A)	368.2	N/A	1.0639 [1.0000]	106.4% { 112.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 308448	(8.02 , N/A) (N/A , -0.04 , N/A)	629.3	N/A	0.9557 [1.0000]	95.6% { 108.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 228709	(9.46 , N/A) (N/A , -0.03 , N/A)	630.1	N/A	0.9082 [1.0000]	90.8% { 89.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 654836	(3.71 , N/A) (N/A , -0.01 , N/A)	926.4	N/A	8.4797 [8.0000]	106.0% { 102.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 357277	(5.00 , N/A) (N/A , -0.03 , N/A)	835.1	N/A	3.7168 [4.0000]	92.9% { 109.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 288014	(6.14 , N/A) (N/A , -0.03 , N/A)	726.8	N/A	1.9688 [2.0000]	98.4% { 104.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 250930	(7.07 , N/A) (N/A , -0.03 , N/A)	695.2	N/A	1.9760 [2.0000]	98.8% { 107.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 243249	(7.89 , N/A) (N/A , -0.03 , N/A)	653.9	N/A	1.9983 [2.0000]	99.9% { 104.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 113014	(8.64 , N/A) (N/A , -0.03 , N/A)	308.7	N/A	1.1128 [1.0000]	111.3% { 109.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 139899	(9.31 , N/A) (N/A , -0.03 , N/A)	67379.9	N/A	0.9881 [1.0000]	98.8% { 114.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 176292	(9.71 , N/A) (N/A , -0.02 , N/A)	417.5	N/A	0.9066 [1.0000]	90.7% { 100.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

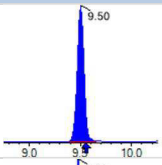
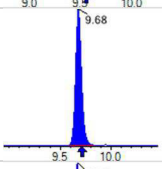
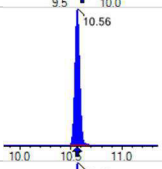
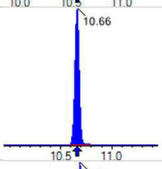
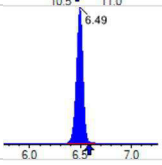
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 215462	(9.89 , N/A) (N/A , -0.01 , N/A)	411.3	N/A	0.9011 [1.0000]	90.1% { 103.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 161774	(10.12 , N/A) (N/A , -0.01 , N/A)	346.8	N/A	1.0775 [1.0000]	107.7% { 119.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 675896	(6.11 , N/A) (N/A , -0.04 , N/A)	729.8	N/A	1.9044 [2.0000]	95.2% { 99.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 384032	(8.02 , N/A) (N/A , -0.03 , N/A)	862.5	N/A	1.9227 [2.0000]	96.1% { 101.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 676908	(9.46 , N/A) (N/A , -0.03 , N/A)	449.8	N/A	2.3771 [2.0000]	118.9% { 113.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 76049	(5.81 , N/A) (N/A , -0.03 , N/A)	519.8	N/A	3.6663 [4.0000]	91.7% { 101.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 112548	(7.55 , N/A) (N/A , -0.03 , N/A)	770.6	N/A	4.4377 [4.0000]	110.9% { 111.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 86805	(8.96 , N/A) (N/A , -0.04 , N/A)	371.3	N/A	3.4306 [4.0000]	85.8% { 89.5% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1069280	(10.17 , N/A) (N/A , 0.00 , N/A)	1261.9	N/A	2.4825 [2.0000]	124.1% { 121.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 254409	(10.60 , N/A) (N/A , 0.00 , N/A)	898.0	N/A	2.3011 [2.0000]	115.1% { 108.8% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 226218	(10.69 , N/A) (N/A , 0.00 , N/A)	898.3	N/A	2.3583 [2.0000]	117.9% { 119.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCV4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (53)
Acquired: 2022/12/14 - 22:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 298694	(9.50 , N/A) (N/A , -0.03 , N/A)	470.2	N/A	4.4318 [4.0000]	110.8% { 117.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 270039	(9.68 , N/A) (N/A , -0.02 , N/A)	509.7	N/A	4.4279 [4.0000]	110.7% { 109.9% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 499916	(10.56 , N/A) (N/A , 0.00 , N/A)	1277.7	N/A	23.5854 [20.0000]	117.9% { 123.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 259547	(10.66 , N/A) (N/A , 0.00 , N/A)	1277.7	N/A	24.4376 [20.0000]	122.2% { 118.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 692090	(6.49 , N/A) (N/A , -0.03 , N/A)	906.0	N/A	7.7237 [8.0000]	96.5% { 104.2% }			

ANALYSIS SEQUENCE BLANKS

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03823	Instrument:	Saphira
Calibration:	2251013		

Lab Sample ID	Analyte	Found	Units	RL	C
SB03823-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	0.0345	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	0.0142	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	0.0853	ng/mL	0.40	U
	NEtFOSE	0.0806	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: SB03823
Calibration: 2251013

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

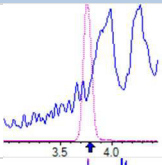
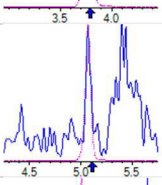
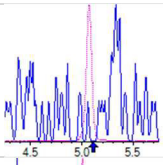
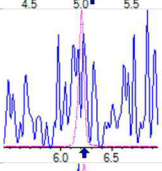
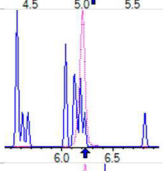
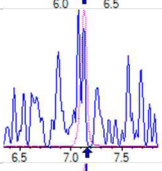
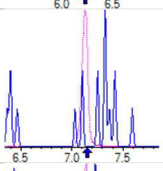
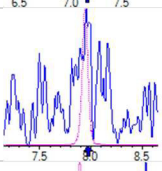
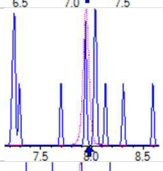
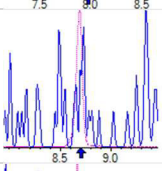
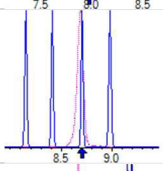
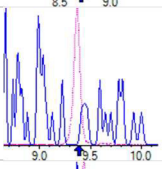
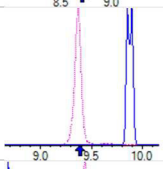
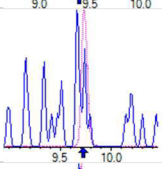
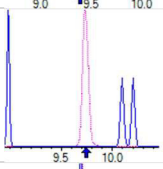
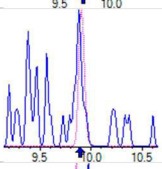
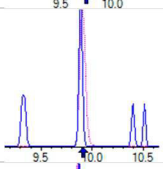
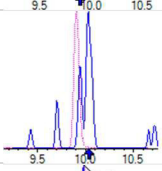
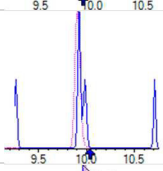
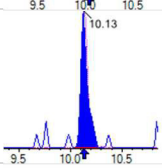
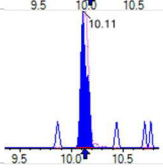
Lab Sample ID	Analyte	Found	Units	RL	C
SB03823-ICB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	8.83	ng/mL		
	13C5-PFPEA	4.42	ng/mL		
	13C5-PFHXA	2.31	ng/mL		
	13C4-PFHPA	2.21	ng/mL		
	13C8-PFOA	2.36	ng/mL		
	13C9-PFNA	1.15	ng/mL		
	13C6-PFDA	1.17	ng/mL		
	13C7-PFUnA	1.27	ng/mL		
	13C2-PFDOA	1.29	ng/mL		
	13C2-PFTEDA	1.27	ng/mL		
	13C3-PFBS	2.47	ng/mL		
	13C3-PFHXS	2.05	ng/mL		
	13C8-PFOS	2.29	ng/mL		
	13C2-4:2FTS	4.09	ng/mL		
	13C2-6:2FTS	4.05	ng/mL		
	13C2-8:2FTS	3.83	ng/mL		
	13C8-PFOSA	2.12	ng/mL		
	D5-NETFOSA	2.36	ng/mL		
	D3-NMEFOSA	2.25	ng/mL		
	D3-NMEFOSAA	3.92	ng/mL		
	D5-NETFOSAA	4.48	ng/mL		
	D7-NMEFOSE	21.1	ng/mL		
	D9-NETFOSE	22.5	ng/mL		
	13C3-HFPO-DA	8.26	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 21:45

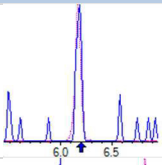
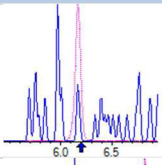
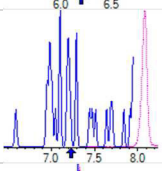
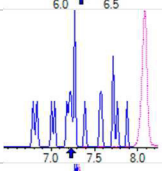
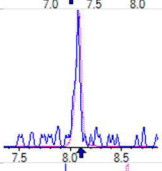
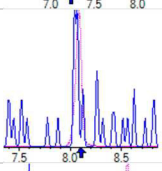
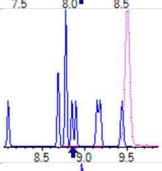
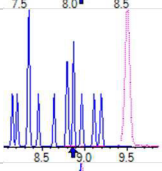
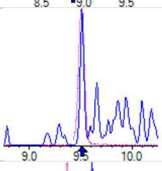
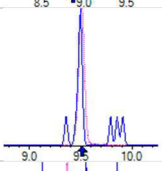
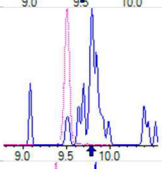
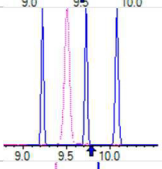
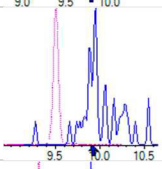
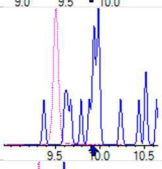
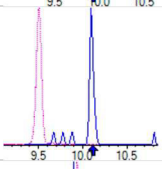
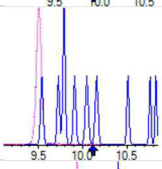
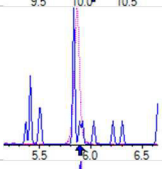
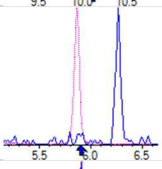
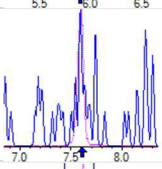
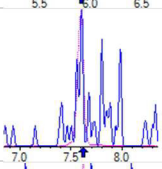
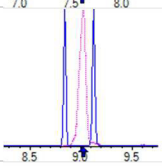
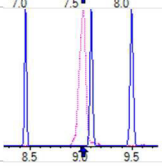
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) 6236 (713.0 / 169.0) 2827	(10.13 , 1.00) (-0.01 , N/A , 0.8)	54.7 60.4	0.4533 243.7 243.7	0.0345	N/A			IR2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 21:45

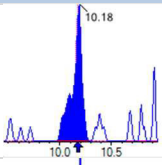
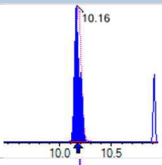
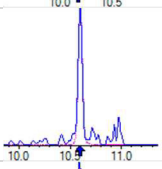
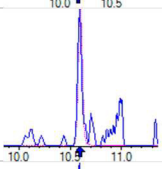
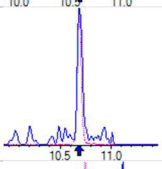
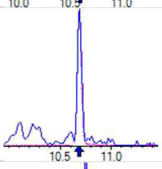
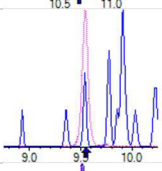
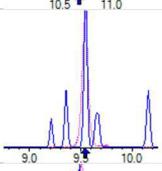
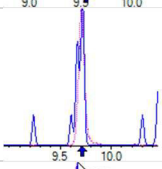
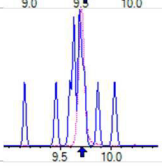
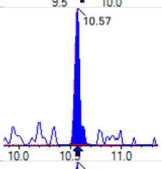
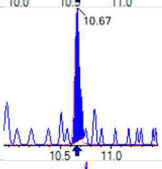
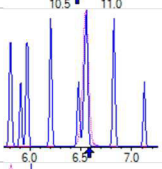
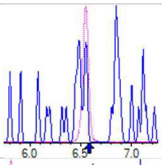
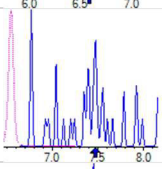
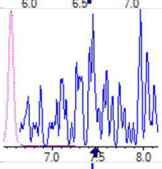
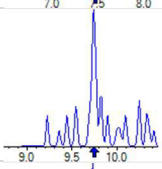
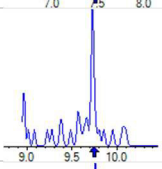
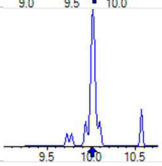
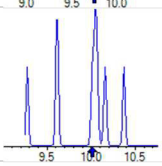
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 21:45

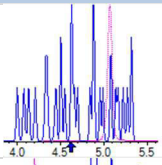
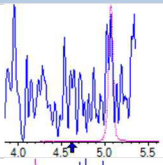
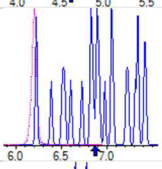
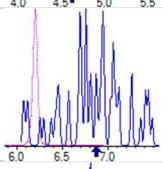
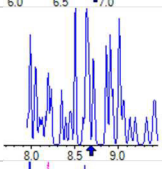
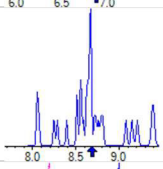
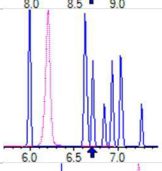
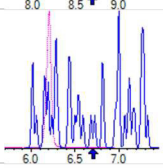
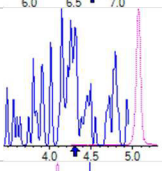
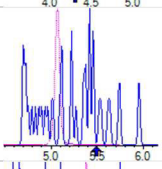
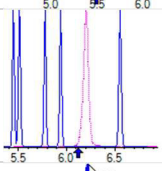
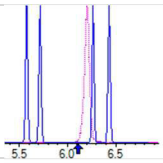
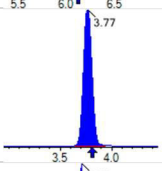
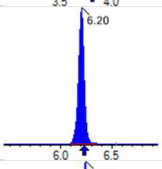
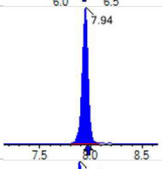
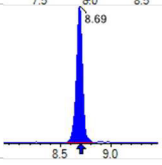
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 8009 (498.0 / 478.0) 919	(10.18 , 1.00) (0.01 , N/A , 1.4)	21.4 68711.7	0.1148 504.1 504.1	0.0142	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) 3257	(10.57 , 1.00) (0.00 , N/A , 0.0)	47.5	N/A 0.0 0.0	0.0853	N/A			
NEtFOSE	(630.0 / 59.0) 824	(10.67 , 1.00) (0.01 , N/A , 0.0)	21.2	N/A 0.0 0.0	0.0806	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 21:45

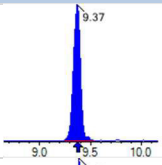
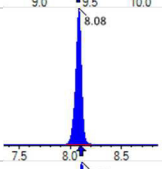
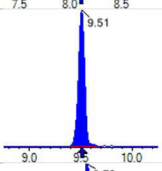
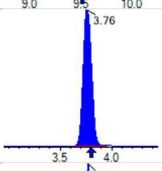
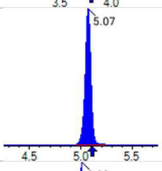
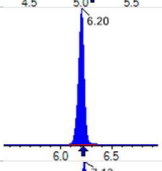
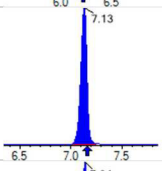
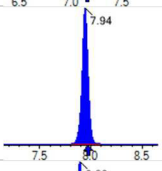
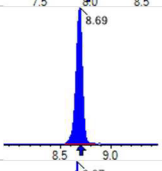
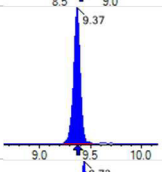
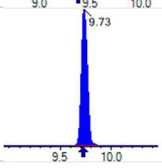
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 134866	(3.77 , N/A) (N/A , -0.04 , N/A)	720.2	N/A	1.1115 [1.0000]	111.2% { 106.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 206317	(6.20 , N/A) (N/A , -0.03 , N/A)	608.5	N/A	1.1306 [1.0000]	113.1% { 105.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 187514	(7.94 , N/A) (N/A , -0.02 , N/A)	472.9	N/A	1.0742 [1.0000]	107.4% { 106.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 158249	(8.69 , N/A) (N/A , -0.02 , N/A)	391.9	N/A	1.1646 [1.0000]	116.5% { 119.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 21:45

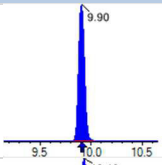
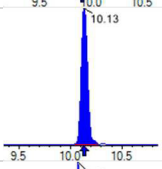
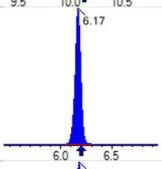
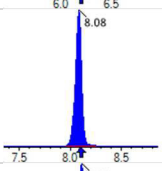
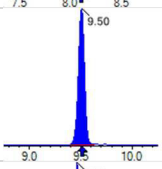
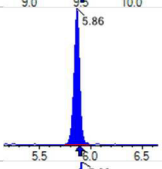
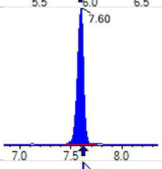
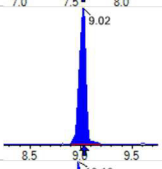
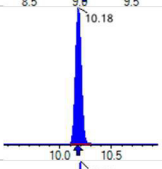
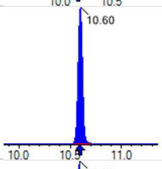
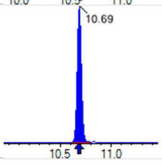
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 153438	(9.37 , N/A) (N/A , -0.01 , N/A)	360.8	N/A	1.1058 [1.0000]	110.6% { 108.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 372412	(8.08 , N/A) (N/A , -0.02 , N/A)	726.9	N/A	1.1539 [1.0000]	115.4% { 111.1% }			
13C4_PFOS_IIS	(502.8 / 79.9) 289279	(9.51 , N/A) (N/A , 0.00 , N/A)	393.2	N/A	1.1487 [1.0000]	114.9% { 104.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 908255	(3.76 , N/A) (N/A , -0.04 , N/A)	770.5	N/A	8.8349 [8.0000]	110.4% { 114.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 504536	(5.07 , N/A) (N/A , -0.04 , N/A)	763.6	N/A	4.4159 [4.0000]	110.4% { 118.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 401333	(6.20 , N/A) (N/A , -0.02 , N/A)	620.0	N/A	2.3082 [2.0000]	115.4% { 126.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 333936	(7.13 , N/A) (N/A , -0.02 , N/A)	689.3	N/A	2.2124 [2.0000]	110.6% { 115.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 339328	(7.94 , N/A) (N/A , -0.02 , N/A)	1014.1	N/A	2.3600 [2.0000]	118.0% { 125.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 140093	(8.69 , N/A) (N/A , -0.01 , N/A)	383.5	N/A	1.1490 [1.0000]	114.9% { 129.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 171598	(9.37 , N/A) (N/A , -0.01 , N/A)	333.0	N/A	1.1661 [1.0000]	116.6% { 141.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 257418	(9.73 , N/A) (N/A , 0.00 , N/A)	534.9	N/A	1.2737 [1.0000]	127.4% { 138.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 21:45

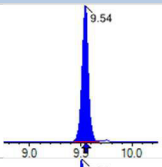
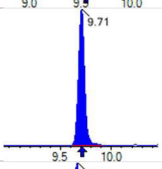
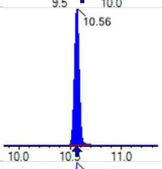
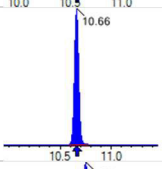
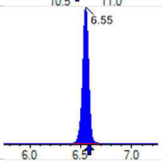
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 319752	(9.90 , N/A) (N/A , 0.00 , N/A)	561.4	N/A	1.2865 [1.0000]	128.7% { 130.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 197540	(10.13 , N/A) (N/A , 0.00 , N/A)	345.4	N/A	1.2658 [1.0000]	126.6% { 132.7% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1060125	(6.17 , N/A) (N/A , -0.03 , N/A)	1017.4	N/A	2.4740 [2.0000]	123.7% { 137.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 494540	(8.08 , N/A) (N/A , -0.02 , N/A)	748.5	N/A	2.0507 [2.0000]	102.5% { 110.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 824634	(9.50 , N/A) (N/A , 0.00 , N/A)	592.8	N/A	2.2896 [2.0000]	114.5% { 129.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 102491	(5.86 , N/A) (N/A , -0.03 , N/A)	529.9	N/A	4.0924 [4.0000]	102.3% { 109.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 124018	(7.60 , N/A) (N/A , -0.02 , N/A)	583.5	N/A	4.0500 [4.0000]	101.3% { 111.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 117086	(9.02 , N/A) (N/A , -0.01 , N/A)	349.5	N/A	3.8325 [4.0000]	95.8% { 105.8% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1152362	(10.18 , N/A) (N/A , 0.01 , N/A)	1025.9	N/A	2.1152 [2.0000]	105.8% { 111.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 314976	(10.60 , N/A) (N/A , 0.00 , N/A)	956.5	N/A	2.2524 [2.0000]	112.6% { 134.6% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 286579	(10.69 , N/A) (N/A , 0.00 , N/A)	1156.5	N/A	2.3620 [2.0000]	118.1% { 133.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03823-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-13B013.wiff- 0
Acquired: 2022/12/13 - 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
D3_MeFOSAA_EIS	(573.0 / 419.0) 333864	(9.54 , N/A) (N/A , 0.00 , N/A)	278.0	N/A	3.9164 [4.0000]	97.9% { 105.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 345380	(9.71 , N/A) (N/A , 0.00 , N/A)	355.3	N/A	4.4775 [4.0000]	111.9% { 116.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 566318	(10.56 , N/A) (N/A , 0.01 , N/A)	1440.8	N/A	21.1239 [20.0000]	105.6% { 124.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 302329	(10.66 , N/A) (N/A , 0.01 , N/A)	1820.0	N/A	22.5056 [20.0000]	112.5% { 126.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 880191	(6.55 , N/A) (N/A , -0.03 , N/A)	878.5	N/A	8.2642 [8.0000]	103.3% { 117.5% }			

ANALYSIS SEQUENCE BLANKS

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-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	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

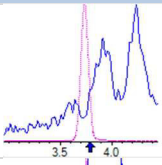
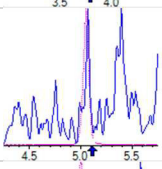
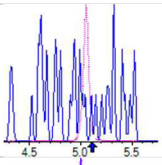
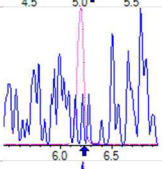
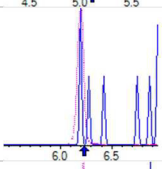
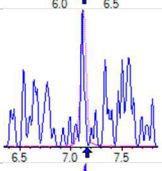
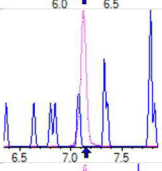
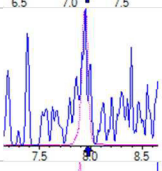
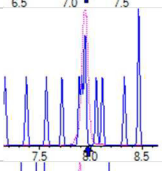
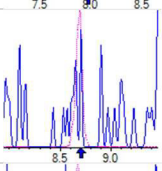
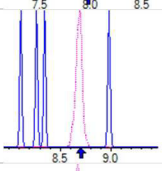
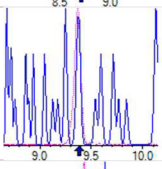
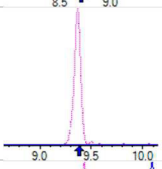
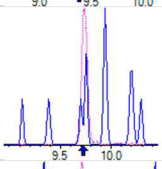
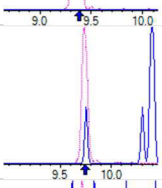
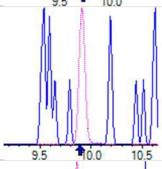
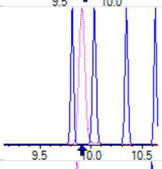
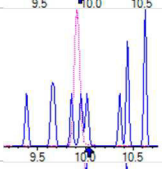
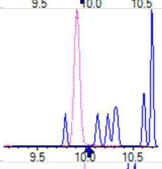
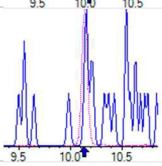
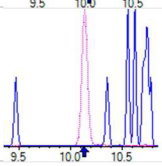
Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-CCB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	10.5	ng/mL		
	13C5-PFPEA	4.64	ng/mL		
	13C5-PFHXA	2.18	ng/mL		
	13C4-PFHPA	2.20	ng/mL		
	13C8-PFOA	2.65	ng/mL		
	13C9-PFNA	1.19	ng/mL		
	13C6-PFDA	1.26	ng/mL		
	13C7-PFUnA	1.44	ng/mL		
	13C2-PFDOA	1.02	ng/mL		
	13C2-PFTEDA	1.41	ng/mL		
	13C3-PFBS	2.59	ng/mL		
	13C3-PFHXS	2.45	ng/mL		
	13C8-PFOS	2.69	ng/mL		
	13C2-4:2FTS	4.37	ng/mL		
	13C2-6:2FTS	4.03	ng/mL		
	13C2-8:2FTS	3.56	ng/mL		
	13C8-PFOSA	2.45	ng/mL		
	D5-NETFOSA	2.38	ng/mL		
	D3-NMEFOSA	2.16	ng/mL		
	D3-NMEFOSAA	4.12	ng/mL		
	D5-NETFOSAA	4.11	ng/mL		
	D7-NMEFOSE	19.3	ng/mL		
	D9-NETFOSE	21.0	ng/mL		
	13C3-HFPO-DA	9.79	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-o
Acquired: 2022/12/14 - 10:56

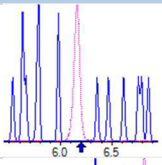
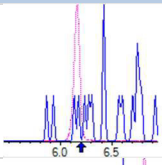
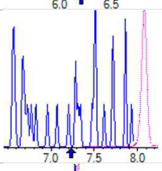
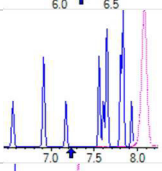
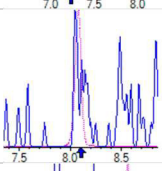
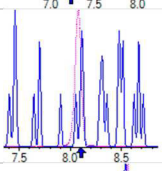
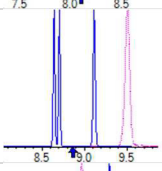
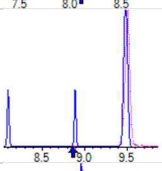
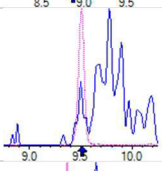
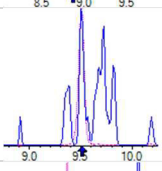
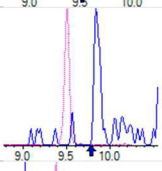
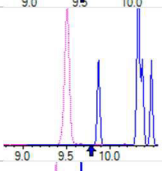
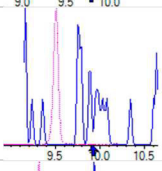
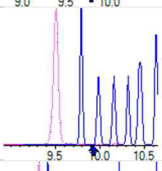
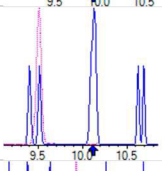
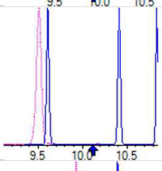
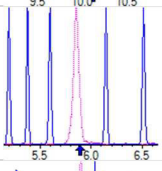
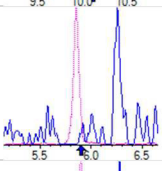
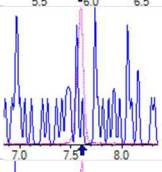
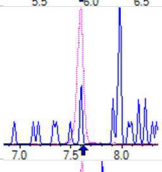
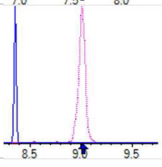
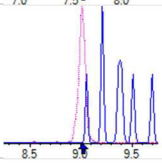
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-o
Acquired: 2022/12/14 - 10:56

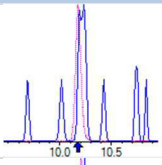
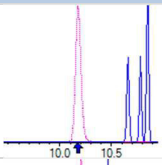
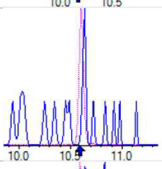
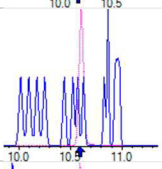
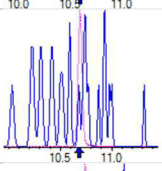
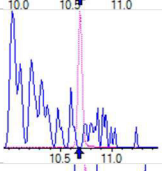
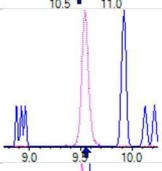
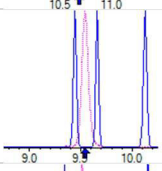
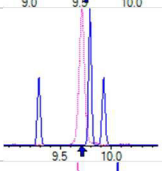
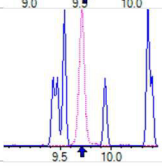
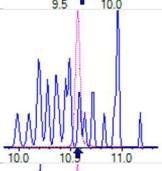
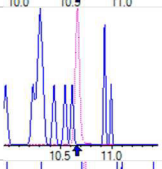
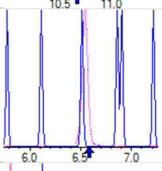
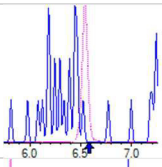
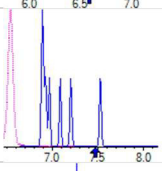
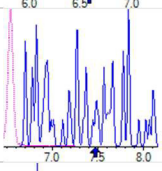
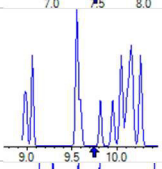
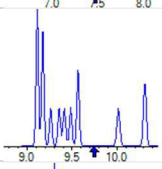
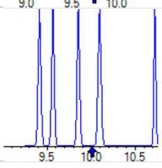
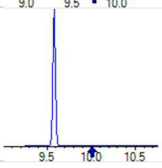
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-o
Acquired: 2022/12/14 - 10:56

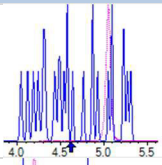
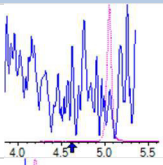
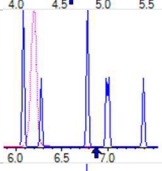
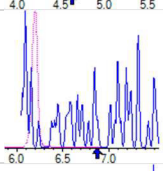
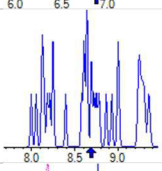
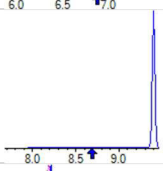
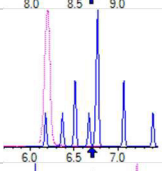
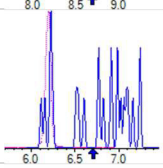
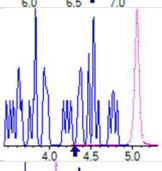
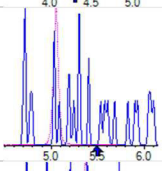
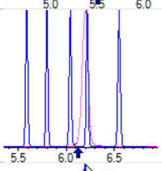
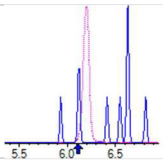
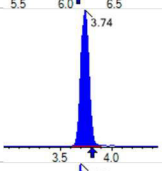
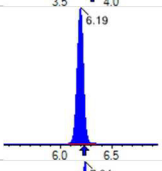
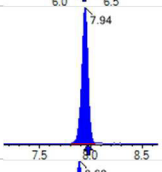
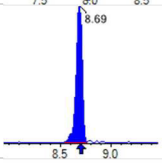
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-o
Acquired: 2022/12/14 - 10:56

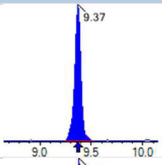
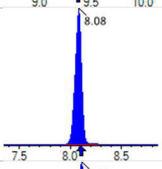
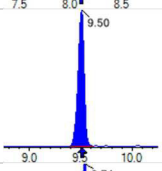
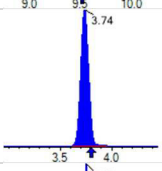
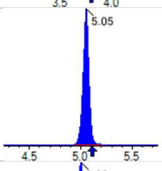
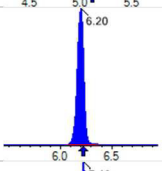
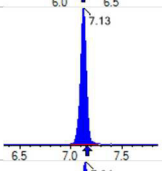
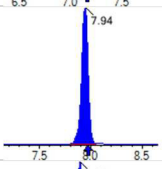
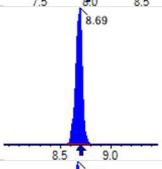
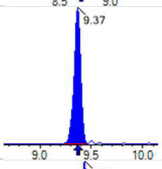
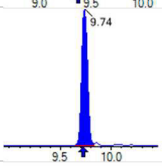
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 78642	(3.74 , N/A) (N/A , 0.02 , N/A)	703.3	N/A	0.6482 [1.0000]	64.8% { 81.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 124570	(6.19 , N/A) (N/A , 0.02 , N/A)	773.8	N/A	0.6826 [1.0000]	68.3% { 71.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 107576	(7.94 , N/A) (N/A , 0.02 , N/A)	517.9	N/A	0.6162 [1.0000]	61.6% { 74.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 81915	(8.69 , N/A) (N/A , 0.02 , N/A)	333.8	N/A	0.6028 [1.0000]	60.3% { 69.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-
Acquired: 2022/12/14 - 10:56

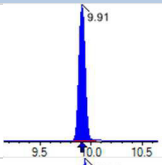
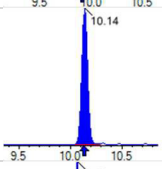
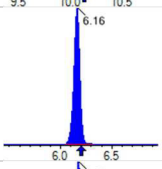
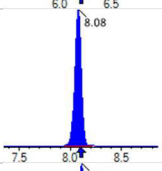
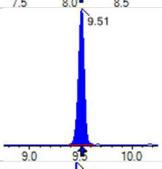
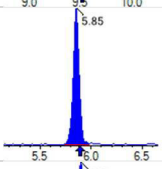
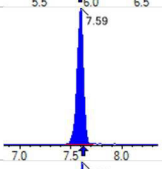
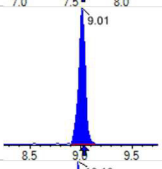
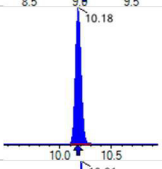
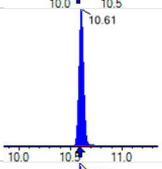
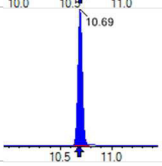
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 94385	(9.37 , N/A) (N/A , 0.02 , N/A)	441.7	N/A	0.6802 [1.0000]	68.0% { 72.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 207588	(8.08 , N/A) (N/A , 0.02 , N/A)	853.8	N/A	0.6432 [1.0000]	64.3% { 73.3% }			
13C4_PFOS_IIS	(502.8 / 79.9) 173456	(9.50 , N/A) (N/A , 0.01 , N/A)	304.7	N/A	0.6888 [1.0000]	68.9% { 68.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 628706	(3.74 , N/A) (N/A , 0.02 , N/A)	882.0	N/A	10.4879 [8.0000]	131.1% { 98.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 320053	(5.05 , N/A) (N/A , 0.02 , N/A)	845.5	N/A	4.6395 [4.0000]	116.0% { 98.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 229356	(6.20 , N/A) (N/A , 0.02 , N/A)	717.9	N/A	2.1847 [2.0000]	109.2% { 82.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 200698	(7.13 , N/A) (N/A , 0.02 , N/A)	587.4	N/A	2.2022 [2.0000]	110.1% { 86.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 218510	(7.94 , N/A) (N/A , 0.02 , N/A)	467.0	N/A	2.6490 [2.0000]	132.4% { 94.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 75297	(8.69 , N/A) (N/A , 0.02 , N/A)	13406.7	N/A	1.1931 [1.0000]	119.3% { 73.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 113755	(9.37 , N/A) (N/A , 0.02 , N/A)	332.8	N/A	1.2567 [1.0000]	125.7% { 93.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 178467	(9.74 , N/A) (N/A , 0.01 , N/A)	237.6	N/A	1.4355 [1.0000]	143.5% { 102.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-
Acquired: 2022/12/14 - 10:56

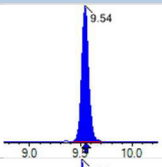
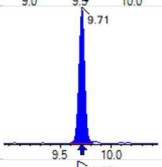
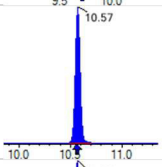
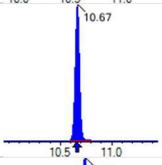
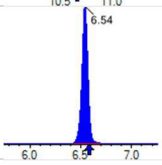
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 155247	(9.91 , N/A) (N/A , 0.01 , N/A)	398.1	N/A	1.0154 [1.0000]	101.5% { 74.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 135658	(10.14 , N/A) (N/A , 0.00 , N/A)	349.7	N/A	1.4131 [1.0000]	141.3% { 100.6% }			
13C3_PFBS_EIS	(302.0 / 80.0) 617691	(6.16 , N/A) (N/A , 0.02 , N/A)	709.0	N/A	2.5861 [2.0000]	129.3% { 90.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 329075	(8.08 , N/A) (N/A , 0.02 , N/A)	848.2	N/A	2.4481 [2.0000]	122.4% { 87.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 580739	(9.51 , N/A) (N/A , 0.01 , N/A)	484.1	N/A	2.6891 [2.0000]	134.5% { 97.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 61023	(5.85 , N/A) (N/A , 0.02 , N/A)	357.1	N/A	4.3713 [4.0000]	109.3% { 81.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 68769	(7.59 , N/A) (N/A , 0.02 , N/A)	541.9	N/A	4.0289 [4.0000]	100.7% { 68.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 60575	(9.01 , N/A) (N/A , 0.01 , N/A)	331.0	N/A	3.5571 [4.0000]	88.9% { 62.5% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 800573	(10.18 , N/A) (N/A , 0.00 , N/A)	1283.5	N/A	2.4507 [2.0000]	122.5% { 90.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 180858	(10.61 , N/A) (N/A , 0.01 , N/A)	1024.1	N/A	2.1569 [2.0000]	107.8% { 77.3% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 172986	(10.69 , N/A) (N/A , 0.00 , N/A)	1193.9	N/A	2.3778 [2.0000]	118.9% { 91.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A02.wiff-o
Acquired: 2022/12/14 - 10:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-lmin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 210505	(9.54 , N/A) (N/A , 0.01 , N/A)	397.0	N/A	4.1182 [4.0000]	103.0% { 82.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 190123	(9.71 , N/A) (N/A , 0.01 , N/A)	310.4	N/A	4.1106 [4.0000]	102.8% { 77.4% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 310432	(10.57 , N/A) (N/A , 0.00 , N/A)	823.1	N/A	19.3111 [20.0000]	96.6% { 76.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 168854	(10.67 , N/A) (N/A , 0.00 , N/A)	1011.2	N/A	20.9628 [20.0000]	104.8% { 77.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 629253	(6.54 , N/A) (N/A , 0.02 , N/A)	982.7	N/A	9.7852 [8.0000]	122.3% { 94.7% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
Client: AECOM
Sequence: SB03835
Calibration: 2251013

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-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	0.0146	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	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	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

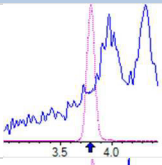
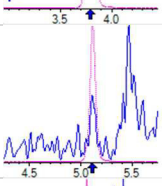
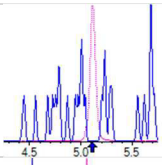
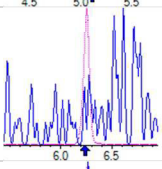
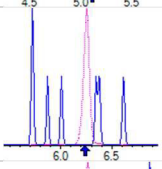
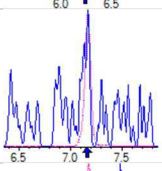
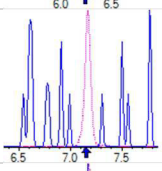
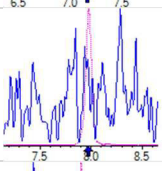
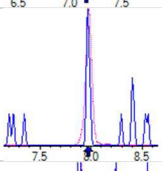
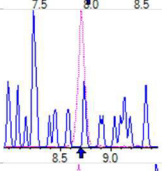
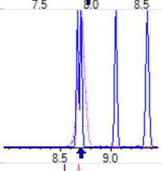
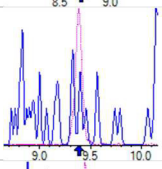
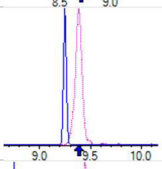
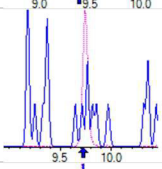
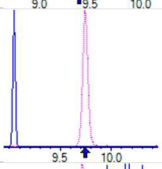
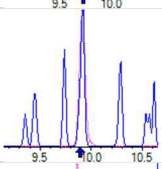
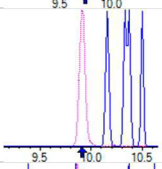
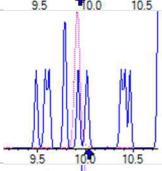
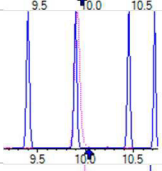
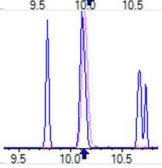
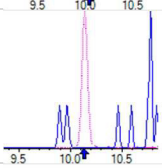
Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-CCB2	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	10.3	ng/mL		
	13C5-PFPEA	4.35	ng/mL		
	13C5-PFHXA	2.53	ng/mL		
	13C4-PFHPA	2.19	ng/mL		
	13C8-PFOA	2.51	ng/mL		
	13C9-PFNA	1.35	ng/mL		
	13C6-PFDA	1.42	ng/mL		
	13C7-PFUnA	1.47	ng/mL		
	13C2-PFDOA	1.20	ng/mL		
	13C2-PFTEDA	1.26	ng/mL		
	13C3-PFBS	2.50	ng/mL		
	13C3-PFHXS	2.43	ng/mL		
	13C8-PFOS	2.80	ng/mL		
	13C2-4:2FTS	5.34	ng/mL		
	13C2-6:2FTS	5.19	ng/mL		
	13C2-8:2FTS	4.79	ng/mL		
	13C8-PFOSA	2.53	ng/mL		
	D5-NETFOSA	2.69	ng/mL		
	D3-NMEFOSA	2.53	ng/mL		
	D3-NMEFOSAA	5.34	ng/mL		
	D5-NETFOSAA	5.05	ng/mL		
	D7-NMEFOSE	24.1	ng/mL		
	D9-NETFOSE	25.1	ng/mL		
	13C3-HFPO-DA	8.96	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-n
Acquired: 2022/12/14 - 11:59

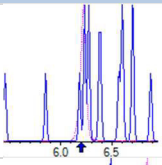
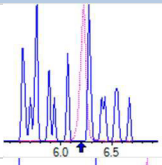
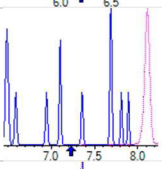
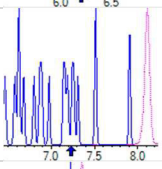
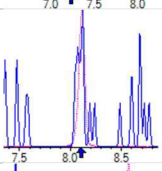
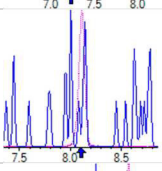
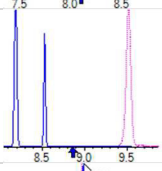
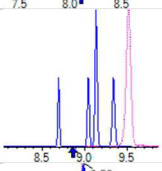
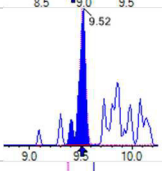
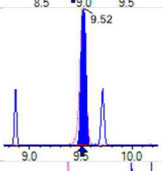
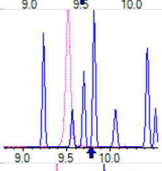
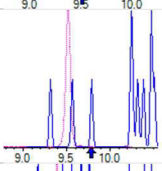
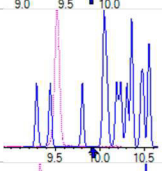
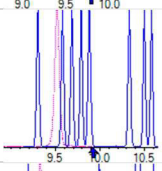
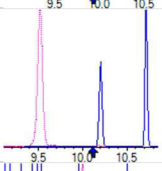
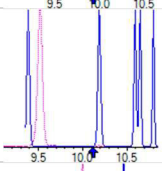
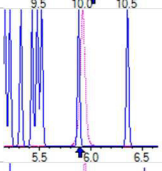
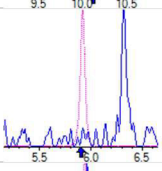
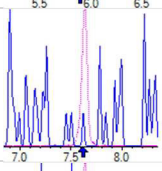
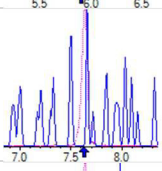
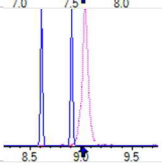
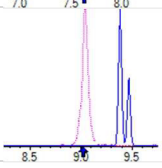
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-
Acquired: 2022/12/14 - 11:59

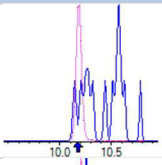
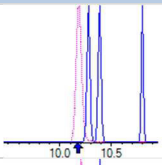
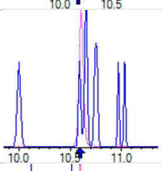
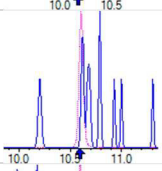
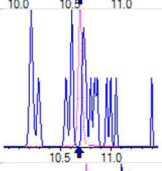
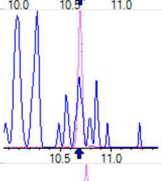
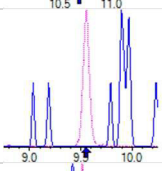
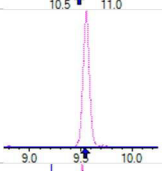
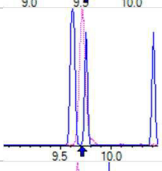
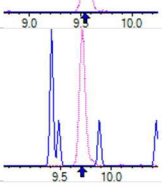
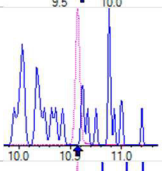
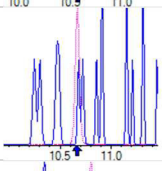
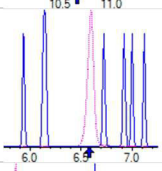
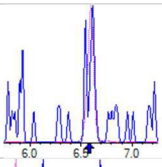
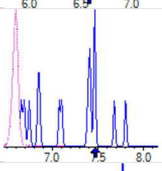
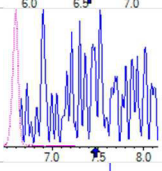
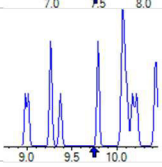
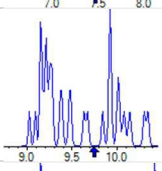
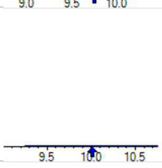
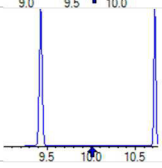
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 4952 (499.0 / 99.0) 1095	(9.52 , 1.00) (0.00 , N/A , -0.2)	40.4 524.0	0.2212 96.4 86.7	0.0146	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-o
Acquired: 2022/12/14 - 11:59

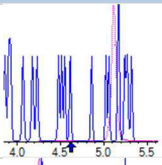
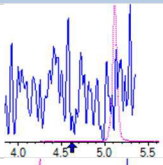
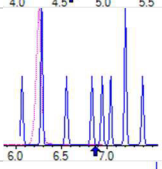
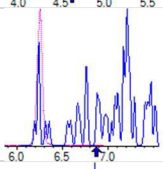
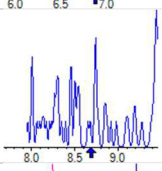
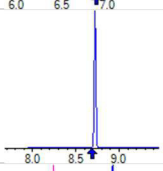
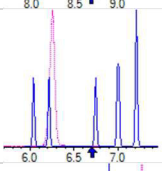
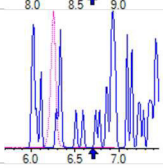
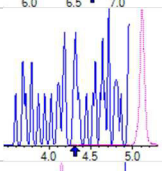
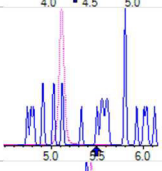
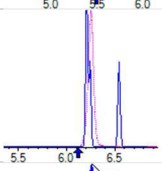
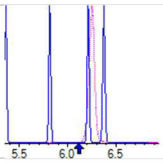
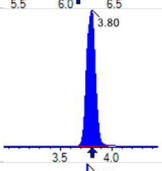
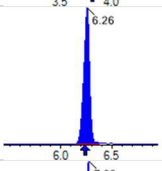
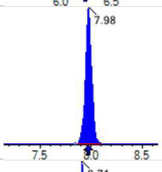
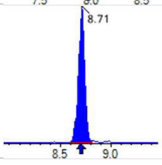
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-o
Acquired: 2022/12/14 - 11:59

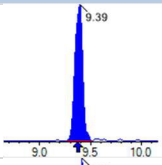
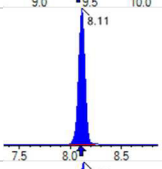
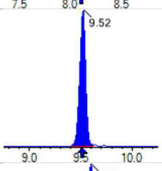
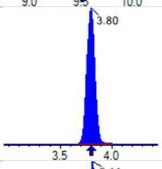
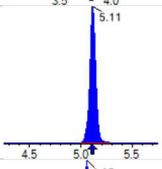
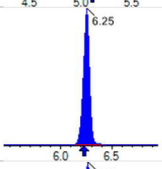
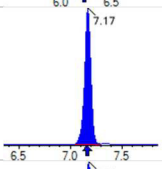
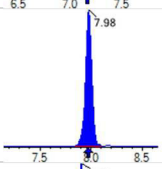
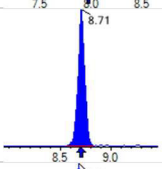
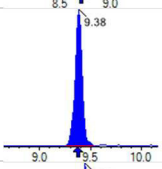
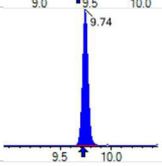
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 81062	(3.80 , N/A) (N/A , 0.08 , N/A)	602.4	N/A	0.6681 [1.0000]	66.8% { 84.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 136381	(6.26 , N/A) (N/A , 0.08 , N/A)	520.5	N/A	0.7474 [1.0000]	74.7% { 77.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 121284	(7.98 , N/A) (N/A , 0.05 , N/A)	672.6	N/A	0.6948 [1.0000]	69.5% { 83.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 91557	(8.71 , N/A) (N/A , 0.04 , N/A)	294.2	N/A	0.6738 [1.0000]	67.4% { 78.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-
Acquired: 2022/12/14 - 11:59

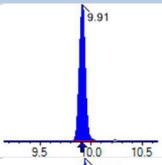
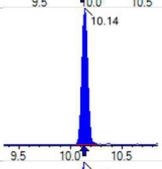
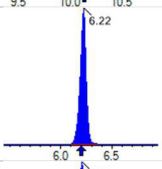
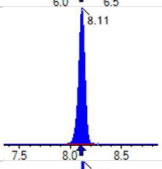
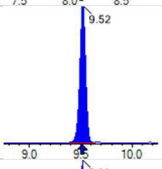
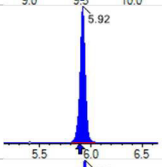
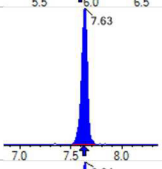
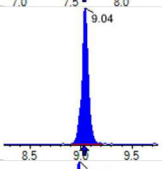
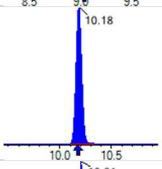
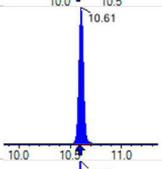
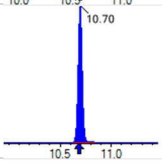
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 90675	(9.39 , N/A) (N/A , 0.04 , N/A)	185.4	N/A	0.6535 [1.0000]	65.3% { 69.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 228770	(8.11 , N/A) (N/A , 0.05 , N/A)	869.8	N/A	0.7088 [1.0000]	70.9% { 80.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 177265	(9.52 , N/A) (N/A , 0.03 , N/A)	445.7	N/A	0.7039 [1.0000]	70.4% { 69.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 638254	(3.80 , N/A) (N/A , 0.08 , N/A)	928.2	N/A	10.3294 [8.0000]	129.1% { 99.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 328234	(5.11 , N/A) (N/A , 0.09 , N/A)	809.4	N/A	4.3460 [4.0000]	108.6% { 100.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 291099	(6.25 , N/A) (N/A , 0.08 , N/A)	891.5	N/A	2.5327 [2.0000]	126.6% { 105.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 218804	(7.17 , N/A) (N/A , 0.06 , N/A)	475.7	N/A	2.1930 [2.0000]	109.7% { 94.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 233233	(7.98 , N/A) (N/A , 0.05 , N/A)	596.1	N/A	2.5079 [2.0000]	125.4% { 100.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 95053	(8.71 , N/A) (N/A , 0.04 , N/A)	389.3	N/A	1.3475 [1.0000]	134.8% { 92.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 123149	(9.38 , N/A) (N/A , 0.04 , N/A)	320.1	N/A	1.4161 [1.0000]	141.6% { 100.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 175716	(9.74 , N/A) (N/A , 0.01 , N/A)	409.5	N/A	1.4712 [1.0000]	147.1% { 100.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-o
Acquired: 2022/12/14 - 11:59

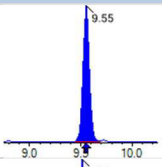
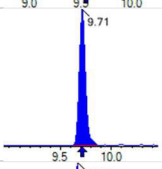
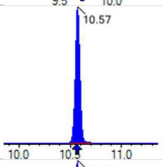
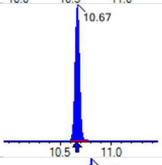
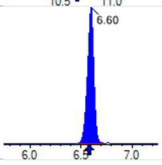
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 176122	(9.91 , N/A) (N/A , 0.01 , N/A)	829.1	N/A	1.1991 [1.0000]	119.9% { 84.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 116471	(10.14 , N/A) (N/A , 0.00 , N/A)	452.8	N/A	1.2629 [1.0000]	126.3% { 86.4% }			
13C3_PFBS_EIS	(302.0 / 80.0) 657485	(6.22 , N/A) (N/A , 0.08 , N/A)	962.4	N/A	2.4978 [2.0000]	124.9% { 96.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 360165	(8.11 , N/A) (N/A , 0.05 , N/A)	728.7	N/A	2.4313 [2.0000]	121.6% { 95.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 618881	(9.52 , N/A) (N/A , 0.03 , N/A)	324.1	N/A	2.8041 [2.0000]	140.2% { 104.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 82184	(5.92 , N/A) (N/A , 0.09 , N/A)	645.1	N/A	5.3420 [4.0000]	133.5% { 109.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 97584	(7.63 , N/A) (N/A , 0.06 , N/A)	656.3	N/A	5.1877 [4.0000]	129.7% { 96.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 89825	(9.04 , N/A) (N/A , 0.04 , N/A)	307.3	N/A	4.7863 [4.0000]	119.7% { 92.6% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 844788	(10.18 , N/A) (N/A , 0.01 , N/A)	685.7	N/A	2.5305 [2.0000]	126.5% { 95.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 216736	(10.61 , N/A) (N/A , 0.01 , N/A)	852.3	N/A	2.5292 [2.0000]	126.5% { 92.7% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 200157	(10.70 , N/A) (N/A , 0.01 , N/A)	1097.5	N/A	2.6922 [2.0000]	134.6% { 105.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A07.wiff-o
Acquired: 2022/12/14 - 11:59

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 278909	(9.55 , N/A) (N/A , 0.02 , N/A)	342.6	N/A	5.3391 [4.0000]	133.5% { 109.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 238885	(9.71 , N/A) (N/A , 0.02 , N/A)	420.2	N/A	5.0538 [4.0000]	126.3% { 97.2% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 395712	(10.57 , N/A) (N/A , 0.01 , N/A)	955.7	N/A	24.0872 [20.0000]	120.4% { 97.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 206221	(10.67 , N/A) (N/A , 0.01 , N/A)	1068.0	N/A	25.0516 [20.0000]	125.3% { 94.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 630812	(6.60 , N/A) (N/A , 0.07 , N/A)	761.9	N/A	8.9600 [8.0000]	112.0% { 94.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-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	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

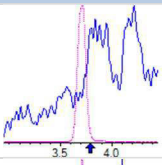
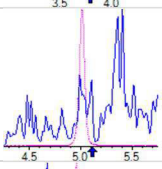
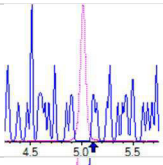
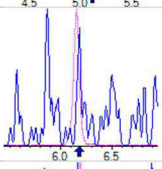
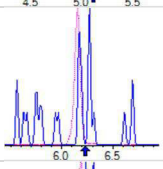
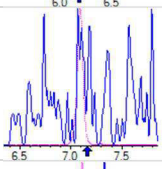
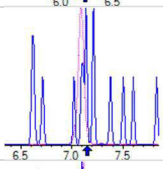
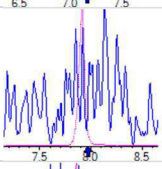
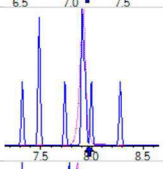
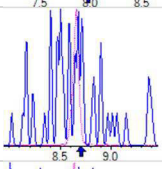
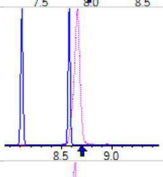
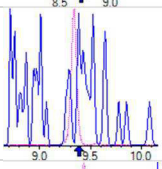
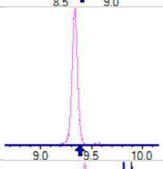
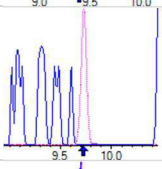
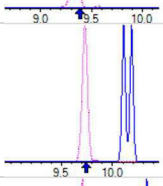
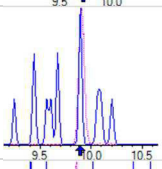
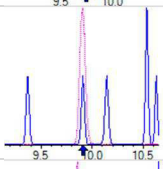
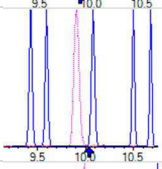
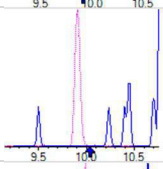
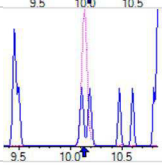
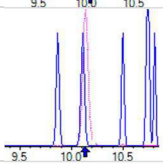
Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-CCB3	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	9.68	ng/mL		
	13C5-PFPEA	4.89	ng/mL		
	13C5-PFHXA	2.41	ng/mL		
	13C4-PFHPA	2.78	ng/mL		
	13C8-PFOA	2.54	ng/mL		
	13C9-PFNA	1.09	ng/mL		
	13C6-PFDA	1.58	ng/mL		
	13C7-PFUnA	1.80	ng/mL		
	13C2-PFDOA	1.41	ng/mL		
	13C2-PFTEDA	1.72	ng/mL		
	13C3-PFBS	2.57	ng/mL		
	13C3-PFHXS	2.59	ng/mL		
	13C8-PFOS	2.44	ng/mL		
	13C2-4:2FTS	4.49	ng/mL		
	13C2-6:2FTS	5.06	ng/mL		
	13C2-8:2FTS	4.74	ng/mL		
	13C8-PFOSA	2.55	ng/mL		
	D5-NETFOSA	2.98	ng/mL		
	D3-NMEFOSA	2.55	ng/mL		
	D3-NMEFOSAA	5.35	ng/mL		
	D5-NETFOSAA	5.56	ng/mL		
	D7-NMEFOSE	26.3	ng/mL		
	D9-NETFOSE	29.7	ng/mL		
	13C3-HFPO-DA	10.2	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

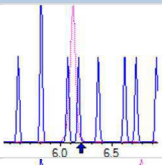
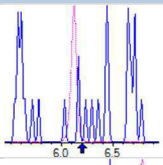
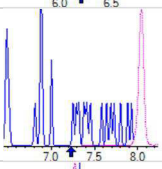
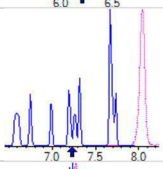
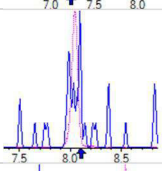
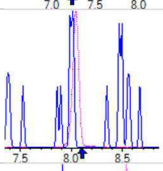
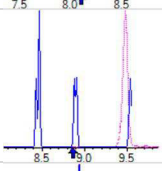
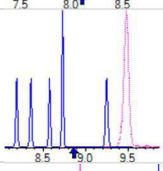
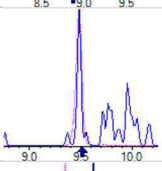
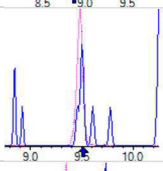
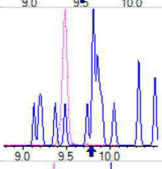
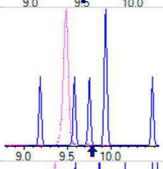
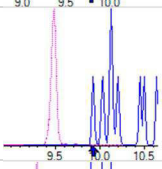
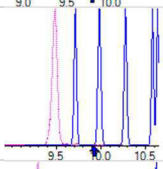
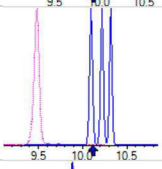
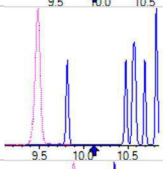
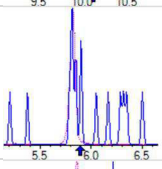
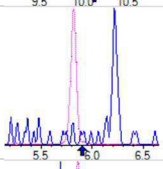
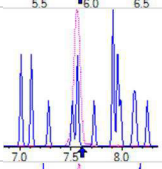
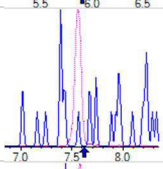
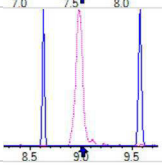
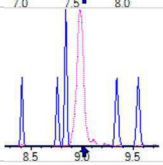
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

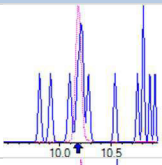
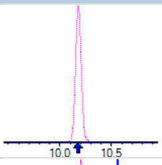
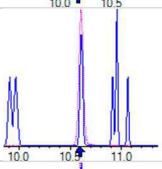
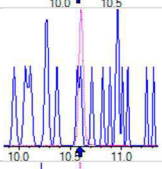
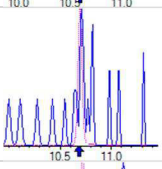
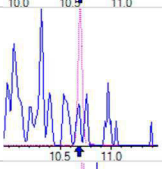
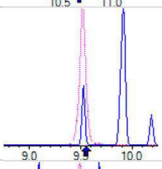
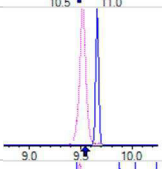
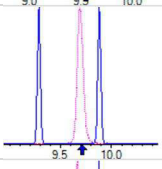
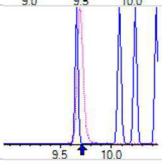
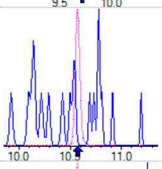
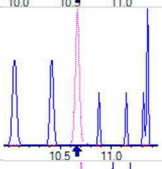
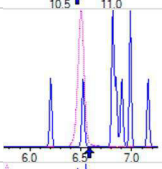
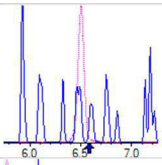
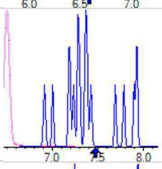
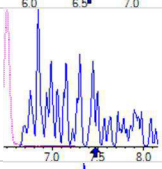
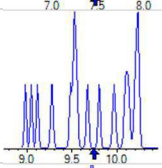
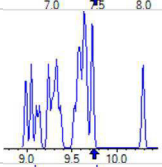
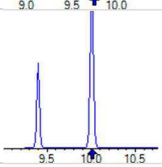
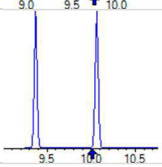
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

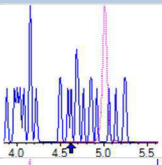
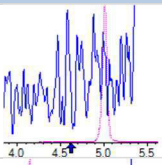
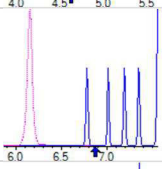
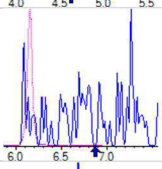
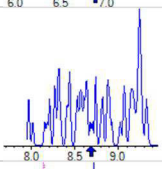
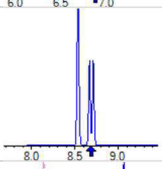
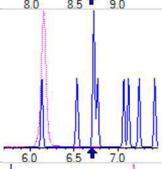
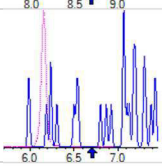
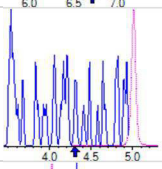
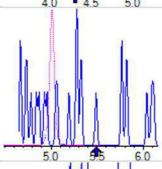
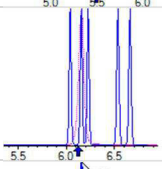
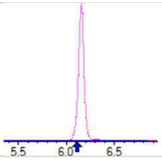
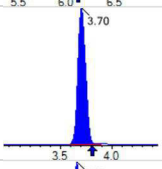
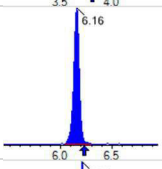
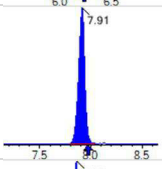
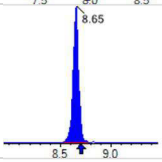
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

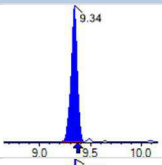
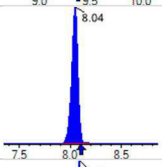
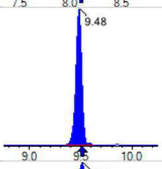
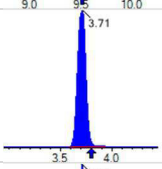
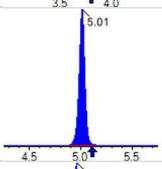
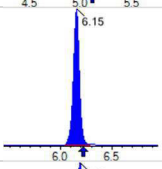
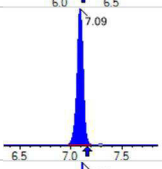
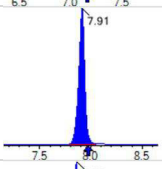
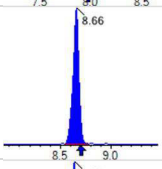
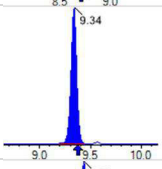
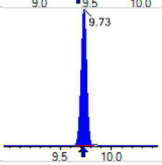
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 81261	(3.70 , N/A) (N/A , -0.01 , N/A)	736.0	N/A	0.6697 [1.0000]	67.0% { 84.4% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 125160	(6.16 , N/A) (N/A , -0.02 , N/A)	579.7	N/A	0.6859 [1.0000]	68.6% { 71.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 129783	(7.91 , N/A) (N/A , -0.01 , N/A)	731.0	N/A	0.7435 [1.0000]	74.3% { 89.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 114177	(8.65 , N/A) (N/A , -0.02 , N/A)	371.6	N/A	0.8402 [1.0000]	84.0% { 97.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

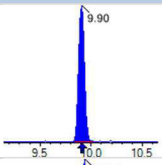
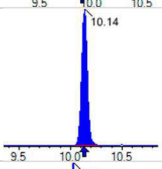
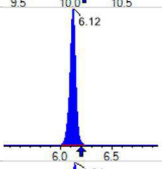
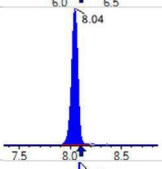
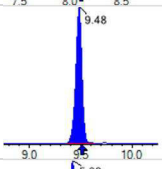
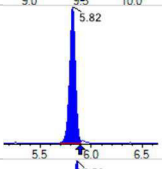
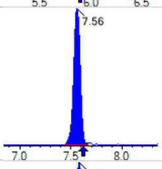
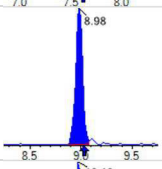
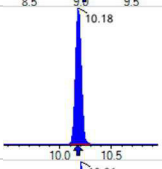
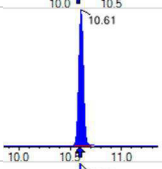
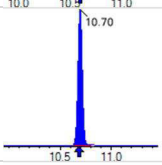
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 88998	(9.34 , N/A) (N/A , 0.00 , N/A)	296.2	N/A	0.6414 [1.0000]	64.1% { 67.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 231716	(8.04 , N/A) (N/A , -0.02 , N/A)	843.0	N/A	0.7180 [1.0000]	71.8% { 81.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 187715	(9.48 , N/A) (N/A , -0.01 , N/A)	366.0	N/A	0.7454 [1.0000]	74.5% { 73.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 599810	(3.71 , N/A) (N/A , -0.01 , N/A)	1025.7	N/A	9.6833 [8.0000]	121.0% { 93.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 339169	(5.01 , N/A) (N/A , -0.02 , N/A)	792.9	N/A	4.8934 [4.0000]	122.3% { 103.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 253699	(6.15 , N/A) (N/A , -0.02 , N/A)	461.4	N/A	2.4052 [2.0000]	120.3% { 91.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 254796	(7.09 , N/A) (N/A , -0.01 , N/A)	639.5	N/A	2.7827 [2.0000]	139.1% { 109.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 253264	(7.91 , N/A) (N/A , -0.01 , N/A)	538.3	N/A	2.5449 [2.0000]	127.2% { 109.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 96079	(8.66 , N/A) (N/A , -0.01 , N/A)	337.9	N/A	1.0922 [1.0000]	109.2% { 93.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 135115	(9.34 , N/A) (N/A , -0.01 , N/A)	364.2	N/A	1.5830 [1.0000]	158.3% { 110.7% }			S2,
13C7_PFUnA_EIS	(570.0 / 525.0) 211111	(9.73 , N/A) (N/A , 0.00 , N/A)	589.0	N/A	1.8008 [1.0000]	180.1% { 120.8% }			S2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

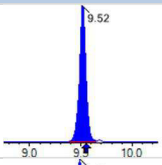
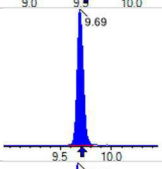
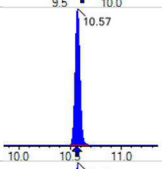
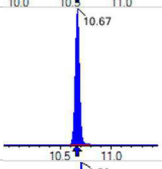
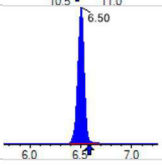
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 203667	(9.90 , N/A) (N/A , 0.00 , N/A)	483.9	N/A	1.4128 [1.0000]	141.3% { 97.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 155794	(10.14 , N/A) (N/A , 0.00 , N/A)	449.8	N/A	1.7211 [1.0000]	172.1% { 115.5% }			S2,
13C3_PFBS_EIS	(302.0 / 80.0) 686151	(6.12 , N/A) (N/A , -0.02 , N/A)	662.4	N/A	2.5736 [2.0000]	128.7% { 100.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 388702	(8.04 , N/A) (N/A , -0.02 , N/A)	721.5	N/A	2.5906 [2.0000]	129.5% { 103.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 570879	(9.48 , N/A) (N/A , -0.01 , N/A)	574.2	N/A	2.4426 [2.0000]	122.1% { 95.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 70019	(5.82 , N/A) (N/A , -0.02 , N/A)	516.1	N/A	4.4934 [4.0000]	112.3% { 93.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 96313	(7.56 , N/A) (N/A , -0.01 , N/A)	680.7	N/A	5.0551 [4.0000]	126.4% { 95.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 90193	(8.98 , N/A) (N/A , -0.01 , N/A)	295.4	N/A	4.7448 [4.0000]	118.6% { 93.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 903119	(10.18 , N/A) (N/A , 0.01 , N/A)	978.8	N/A	2.5546 [2.0000]	127.7% { 102.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 231818	(10.61 , N/A) (N/A , 0.01 , N/A)	1137.1	N/A	2.5546 [2.0000]	127.7% { 99.1% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 234416	(10.70 , N/A) (N/A , 0.01 , N/A)	1078.0	N/A	2.9774 [2.0000]	148.9% { 123.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (25)
Acquired: 2022/12/14 - 16:26

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 296006	(9.52 , N/A) (N/A , -0.01 , N/A)	264.8	N/A	5.3510 [4.0000]	133.8% { 116.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 278184	(9.69 , N/A) (N/A , -0.01 , N/A)	418.6	N/A	5.5576 [4.0000]	138.9% { 113.2% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 456921	(10.57 , N/A) (N/A , 0.01 , N/A)	1180.7	N/A	26.2647 [20.0000]	131.3% { 112.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 258780	(10.67 , N/A) (N/A , 0.01 , N/A)	1154.2	N/A	29.6865 [20.0000]	148.4% { 118.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 657508	(6.50 , N/A) (N/A , -0.02 , N/A)	1256.0	N/A	10.1765 [8.0000]	127.2% { 98.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-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: SB03835
Calibration: 2251013

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

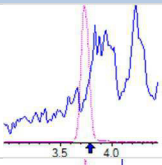
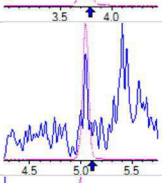
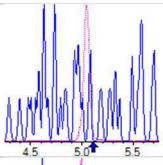
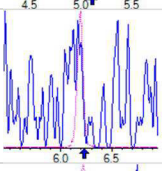
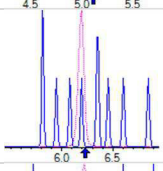
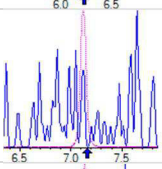
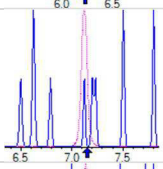
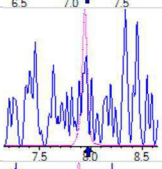
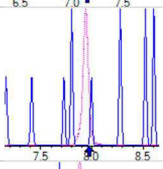
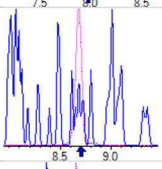
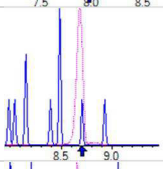
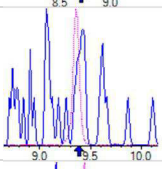
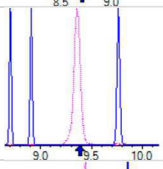
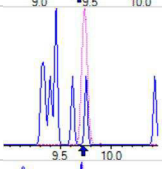
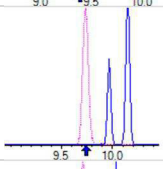
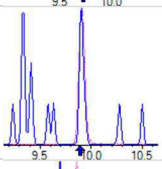
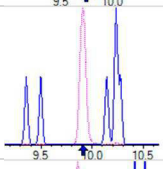
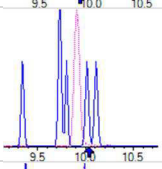
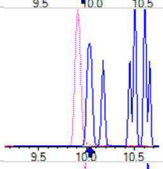
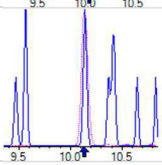
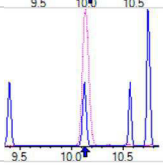
Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-CCB4	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	10.3	ng/mL		
	13C5-PFPEA	5.01	ng/mL		
	13C5-PFHXA	2.62	ng/mL		
	13C4-PFHPA	2.80	ng/mL		
	13C8-PFOA	2.64	ng/mL		
	13C9-PFNA	1.35	ng/mL		
	13C6-PFDA	1.26	ng/mL		
	13C7-PFUnA	1.43	ng/mL		
	13C2-PFDOA	1.27	ng/mL		
	13C2-PFTEDA	1.44	ng/mL		
	13C3-PFBS	2.34	ng/mL		
	13C3-PFHXS	2.57	ng/mL		
	13C8-PFOS	2.87	ng/mL		
	13C2-4:2FTS	4.81	ng/mL		
	13C2-6:2FTS	5.24	ng/mL		
	13C2-8:2FTS	5.09	ng/mL		
	13C8-PFOSA	2.64	ng/mL		
	D5-NETFOSA	3.05	ng/mL		
	D3-NMEFOSA	2.73	ng/mL		
	D3-NMEFOSAA	5.37	ng/mL		
	D5-NETFOSAA	5.18	ng/mL		
	D7-NMEFOSE	27.0	ng/mL		
	D9-NETFOSE	29.5	ng/mL		
	13C3-HFPO-DA	10.2	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

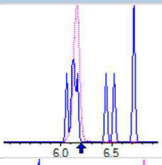
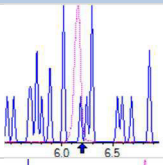
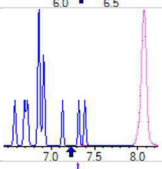
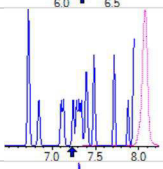
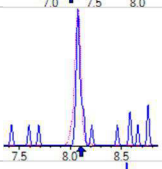
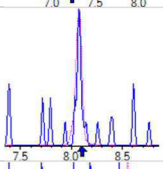
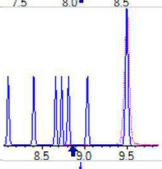
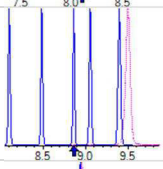
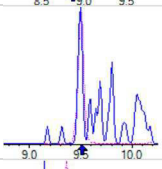
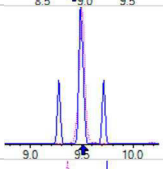
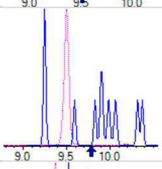
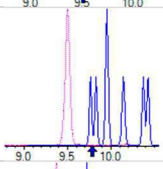
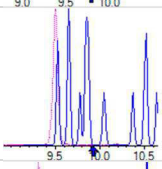
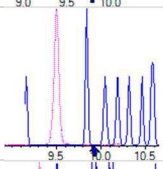
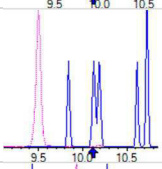
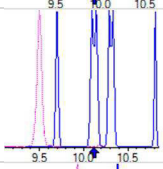
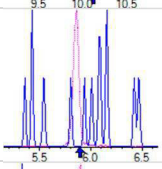
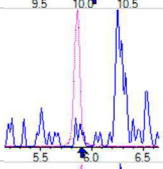
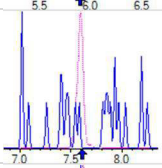
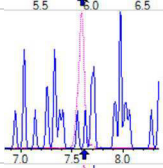
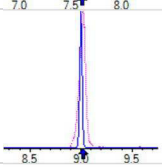
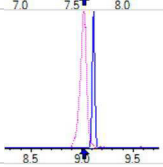
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

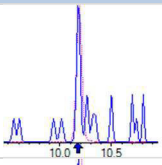
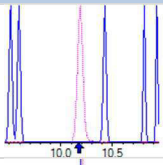
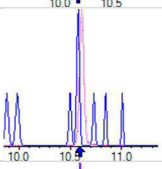
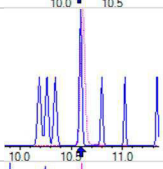
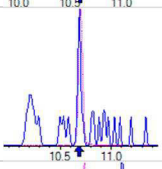
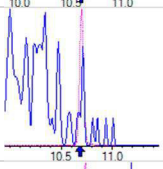
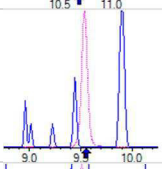
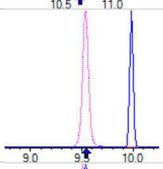
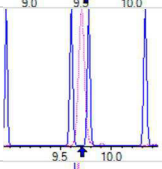
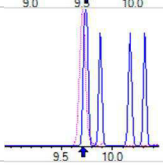
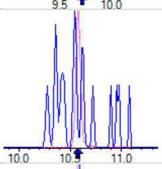
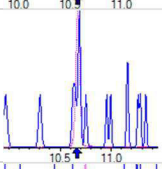
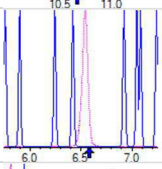
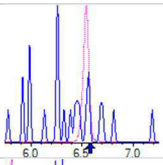
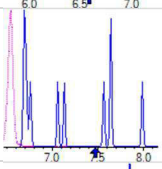
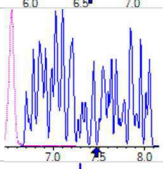
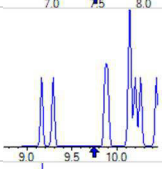
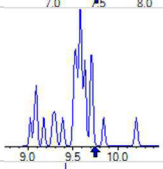
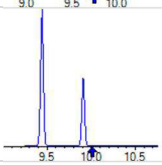
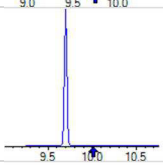
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

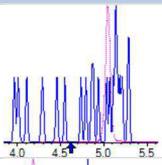
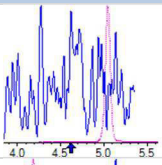
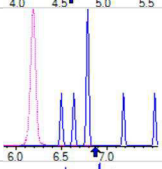
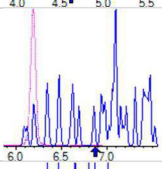
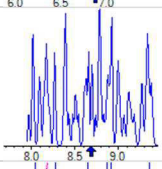
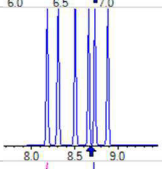
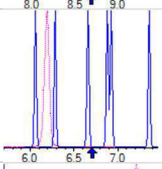
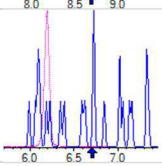
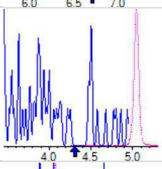
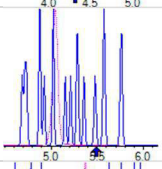
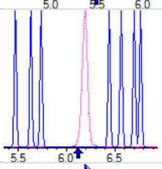
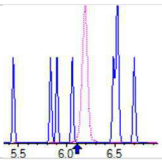
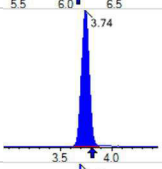
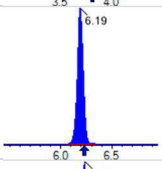
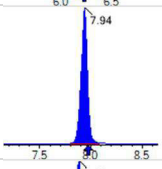
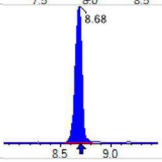
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

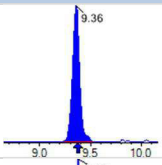
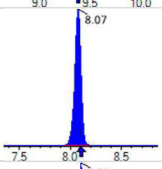
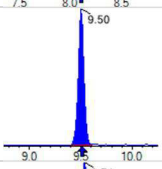
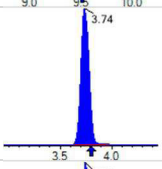
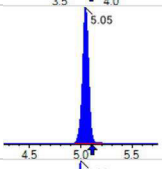
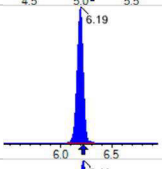
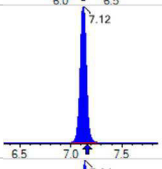
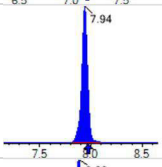
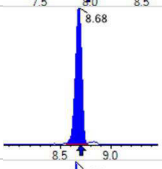
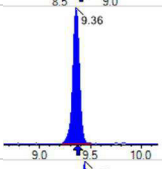
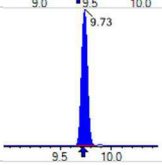
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 81038	(3.74 , N/A) (N/A , 0.03 , N/A)	588.6	N/A	0.6679 [1.0000]	66.8% { 84.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 122671	(6.19 , N/A) (N/A , 0.02 , N/A)	887.2	N/A	0.6722 [1.0000]	67.2% { 70.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 120808	(7.94 , N/A) (N/A , 0.01 , N/A)	466.7	N/A	0.6920 [1.0000]	69.2% { 83.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 90135	(8.68 , N/A) (N/A , 0.01 , N/A)	403.9	N/A	0.6633 [1.0000]	66.3% { 76.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

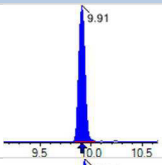
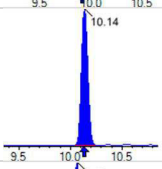
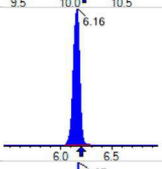
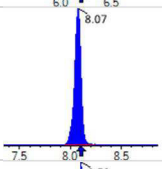
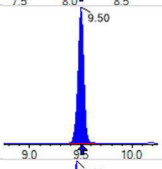
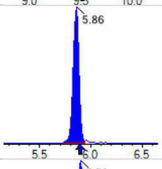
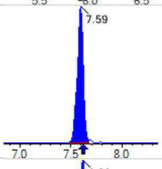
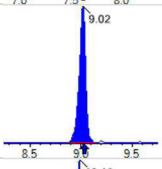
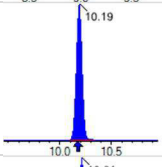
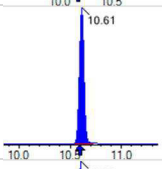
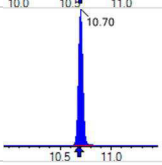
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 97340	(9.36 , N/A) (N/A , 0.01 , N/A)	223.7	N/A	0.7015 [1.0000]	70.2% { 74.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 225745	(8.07 , N/A) (N/A , 0.01 , N/A)	938.8	N/A	0.6995 [1.0000]	69.9% { 79.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 177978	(9.50 , N/A) (N/A , 0.01 , N/A)	479.0	N/A	0.7068 [1.0000]	70.7% { 69.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 637280	(3.74 , N/A) (N/A , 0.03 , N/A)	925.0	N/A	10.3166 [8.0000]	129.0% { 99.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 340278	(5.05 , N/A) (N/A , 0.02 , N/A)	650.5	N/A	5.0090 [4.0000]	125.2% { 104.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 270968	(6.19 , N/A) (N/A , 0.02 , N/A)	631.9	N/A	2.6210 [2.0000]	131.1% { 97.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 251658	(7.12 , N/A) (N/A , 0.02 , N/A)	706.4	N/A	2.8042 [2.0000]	140.2% { 108.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 244596	(7.94 , N/A) (N/A , 0.02 , N/A)	690.2	N/A	2.6404 [2.0000]	132.0% { 105.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 93911	(8.68 , N/A) (N/A , 0.02 , N/A)	239.1	N/A	1.3523 [1.0000]	135.2% { 91.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 117386	(9.36 , N/A) (N/A , 0.01 , N/A)	438.2	N/A	1.2574 [1.0000]	125.7% { 96.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 183031	(9.73 , N/A) (N/A , 0.00 , N/A)	434.7	N/A	1.4275 [1.0000]	142.8% { 104.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

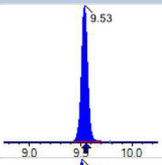
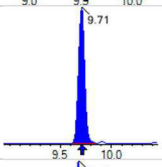
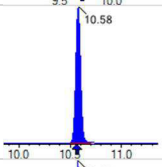
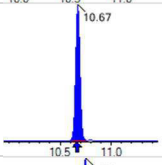
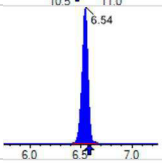
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 200649	(9.91 , N/A) (N/A , 0.00 , N/A)	392.8	N/A	1.2726 [1.0000]	127.3% { 95.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 142155	(10.14 , N/A) (N/A , 0.00 , N/A)	275.6	N/A	1.4359 [1.0000]	143.6% { 105.4% }			
13C3_PFBS_EIS	(302.0 / 80.0) 608618	(6.16 , N/A) (N/A , 0.01 , N/A)	738.7	N/A	2.3431 [2.0000]	117.2% { 89.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 376036	(8.07 , N/A) (N/A , 0.01 , N/A)	909.4	N/A	2.5724 [2.0000]	128.6% { 99.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 635346	(9.50 , N/A) (N/A , 0.01 , N/A)	303.7	N/A	2.8672 [2.0000]	143.4% { 106.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 73030	(5.86 , N/A) (N/A , 0.02 , N/A)	476.9	N/A	4.8106 [4.0000]	120.3% { 97.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 97315	(7.59 , N/A) (N/A , 0.02 , N/A)	835.5	N/A	5.2428 [4.0000]	131.1% { 96.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 94227	(9.02 , N/A) (N/A , 0.02 , N/A)	393.6	N/A	5.0882 [4.0000]	127.2% { 97.1% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 884546	(10.19 , N/A) (N/A , 0.01 , N/A)	1227.7	N/A	2.6390 [2.0000]	131.9% { 100.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 234747	(10.61 , N/A) (N/A , 0.01 , N/A)	827.0	N/A	2.7284 [2.0000]	136.4% { 100.4% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 227508	(10.70 , N/A) (N/A , 0.01 , N/A)	1417.8	N/A	3.0478 [2.0000]	152.4% { 120.1% }			S2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (39)
Acquired: 2022/12/14 - 19:24

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 281518	(9.53 , N/A) (N/A , 0.01 , N/A)	409.5	N/A	5.3675 [4.0000]	134.2% { 110.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 245755	(9.71 , N/A) (N/A , 0.01 , N/A)	294.4	N/A	5.1783 [4.0000]	129.5% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 445534	(10.58 , N/A) (N/A , 0.01 , N/A)	743.3	N/A	27.0112 [20.0000]	135.1% { 109.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 243746	(10.67 , N/A) (N/A , 0.01 , N/A)	889.5	N/A	29.4915 [20.0000]	147.5% { 111.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 645502	(6.54 , N/A) (N/A , 0.02 , N/A)	894.1	N/A	10.1934 [8.0000]	127.4% { 97.1% }			

ANALYSIS SEQUENCE BLANKS

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-CCB5	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPES	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.0115	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	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sam
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

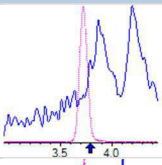
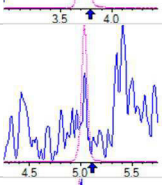
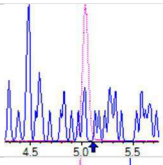
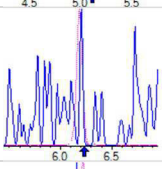
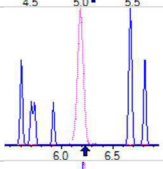
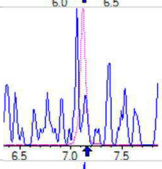
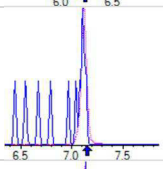
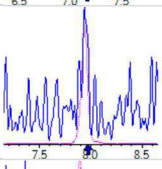
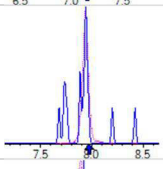
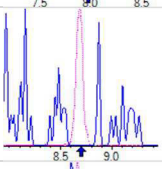
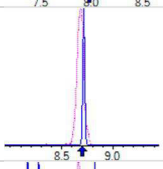
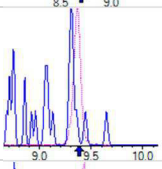
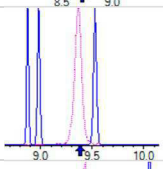
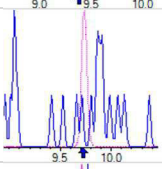
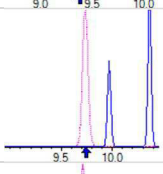
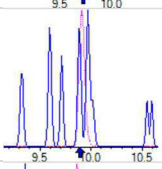
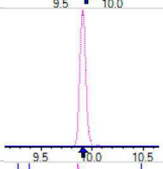
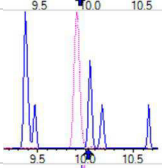
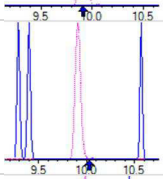
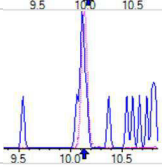
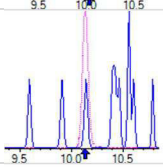
Lab Sample ID	Analyte	Found	Units	RL	C
SB03835-CCB5	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	10.1	ng/mL		
	13C5-PFPEA	4.99	ng/mL		
	13C5-PFHXA	2.65	ng/mL		
	13C4-PFHPA	2.73	ng/mL		
	13C8-PFOA	2.61	ng/mL		
	13C9-PFNA	1.24	ng/mL		
	13C6-PFDA	1.26	ng/mL		
	13C7-PFUnA	1.37	ng/mL		
	13C2-PFDOA	1.45	ng/mL		
	13C2-PFTEDA	1.46	ng/mL		
	13C3-PFBS	2.60	ng/mL		
	13C3-PFHXS	2.24	ng/mL		
	13C8-PFOS	2.32	ng/mL		
	13C2-4:2FTS	4.42	ng/mL		
	13C2-6:2FTS	4.80	ng/mL		
	13C2-8:2FTS	5.10	ng/mL		
	13C8-PFOSA	2.54	ng/mL		
	D5-NETFOSA	2.94	ng/mL		
	D3-NMEFOSA	2.38	ng/mL		
	D3-NMEFOSAA	4.80	ng/mL		
	D5-NETFOSAA	5.30	ng/mL		
	D7-NMEFOSE	29.4	ng/mL		
	D9-NETFOSE	28.5	ng/mL		
	13C3-HFPO-DA	11.2	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

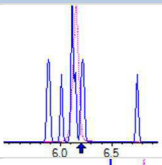
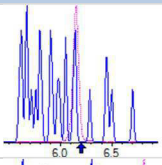
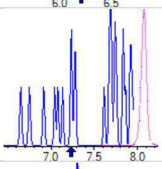
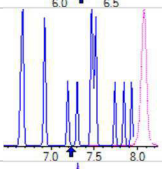
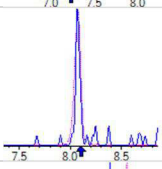
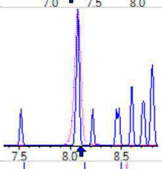
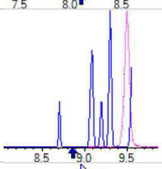
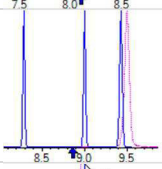
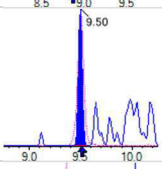
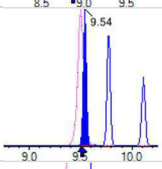
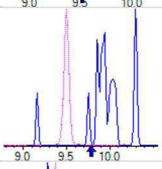
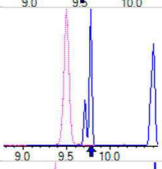
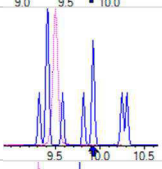
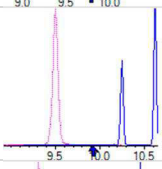
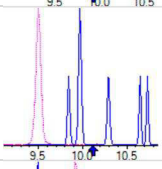
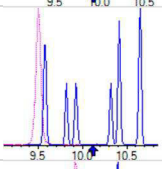
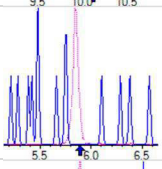
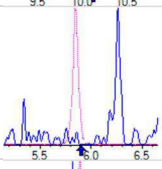
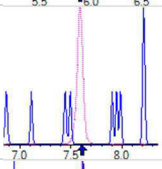
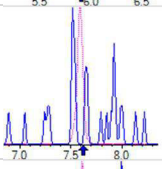
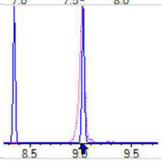
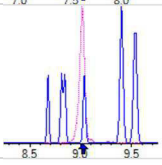
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

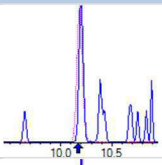
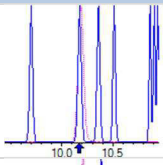
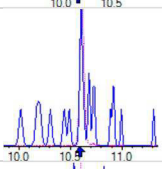
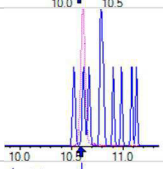
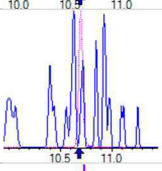
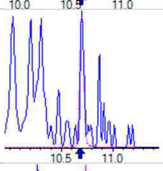
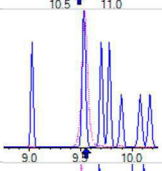
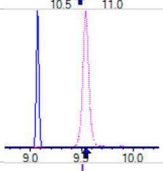
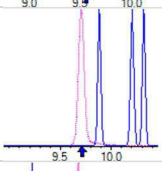
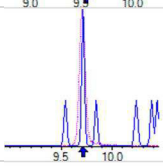
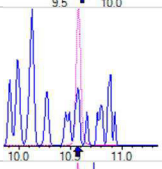
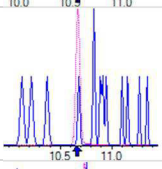
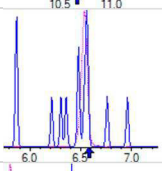
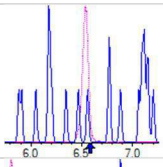
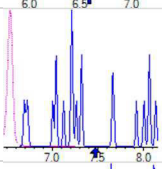
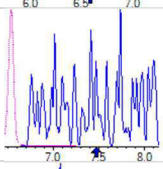
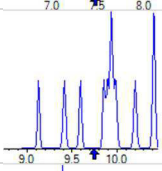
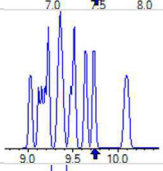
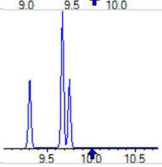
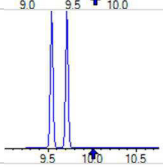
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 3572 (499.0 / 99.0) 546	(9.50 , 1.00) (-0.01 , N/A , -2.7)	22.8 352.9	0.1529 66.6 60.0	0.0115	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

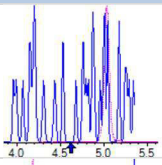
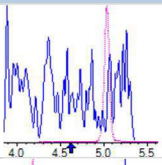
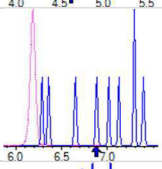
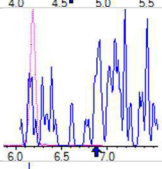
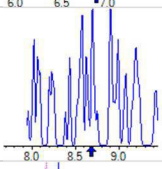
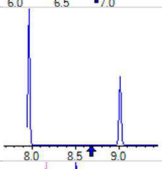
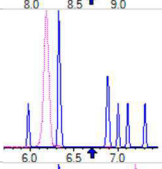
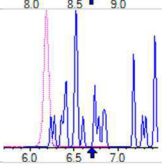
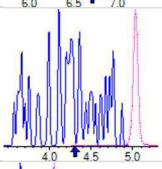
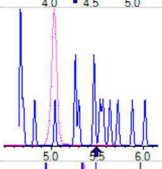
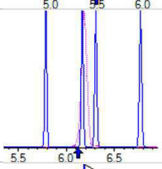
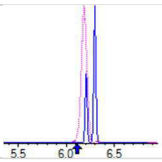
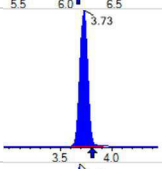
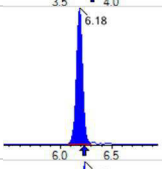
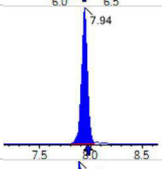
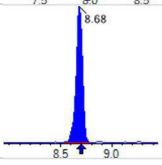
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

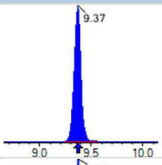
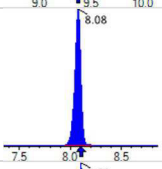
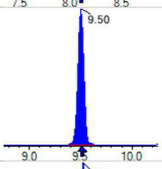
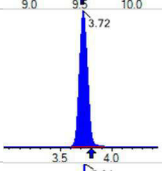
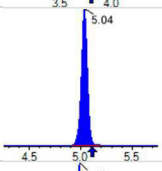
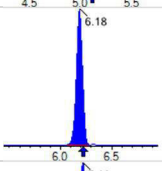
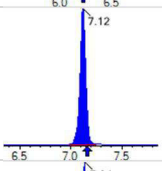
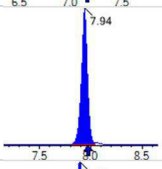
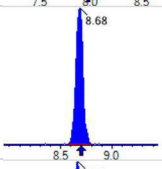
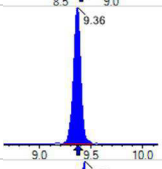
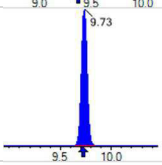
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 81554	(3.73 , N/A) (N/A , 0.01 , N/A)	808.4	N/A	0.6722 [1.0000]	67.2% { 84.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 124402	(6.18 , N/A) (N/A , 0.01 , N/A)	497.0	N/A	0.6817 [1.0000]	68.2% { 71.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 121074	(7.94 , N/A) (N/A , 0.02 , N/A)	614.6	N/A	0.6936 [1.0000]	69.4% { 83.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 99985	(8.68 , N/A) (N/A , 0.01 , N/A)	349.2	N/A	0.7358 [1.0000]	73.6% { 85.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

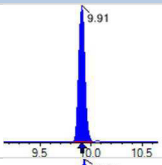
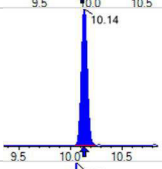
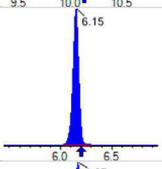
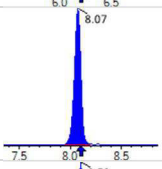
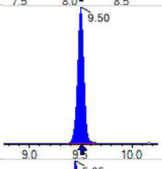
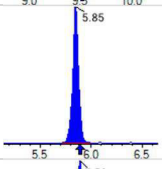
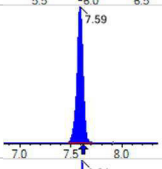
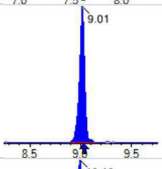
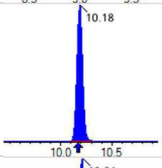
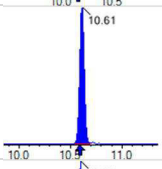
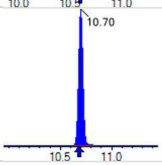
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 97189	(9.37 , N/A) (N/A , 0.02 , N/A)	547.3	N/A	0.7004 [1.0000]	70.0% { 74.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 248721	(8.08 , N/A) (N/A , 0.02 , N/A)	827.5	N/A	0.7707 [1.0000]	77.1% { 87.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 195660	(9.50 , N/A) (N/A , 0.01 , N/A)	437.7	N/A	0.7770 [1.0000]	77.7% { 76.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 624886	(3.72 , N/A) (N/A , 0.01 , N/A)	916.8	N/A	10.0520 [8.0000]	125.6% { 97.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 343667	(5.04 , N/A) (N/A , 0.01 , N/A)	810.7	N/A	4.9885 [4.0000]	124.7% { 105.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 277388	(6.18 , N/A) (N/A , 0.01 , N/A)	754.4	N/A	2.6458 [2.0000]	132.3% { 100.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 248177	(7.12 , N/A) (N/A , 0.01 , N/A)	480.7	N/A	2.7269 [2.0000]	136.3% { 106.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 242543	(7.94 , N/A) (N/A , 0.02 , N/A)	616.2	N/A	2.6125 [2.0000]	130.6% { 104.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 95770	(8.68 , N/A) (N/A , 0.02 , N/A)	437.8	N/A	1.2432 [1.0000]	124.3% { 93.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 117147	(9.36 , N/A) (N/A , 0.01 , N/A)	276.6	N/A	1.2568 [1.0000]	125.7% { 96.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 175805	(9.73 , N/A) (N/A , 0.00 , N/A)	446.9	N/A	1.3733 [1.0000]	137.3% { 100.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

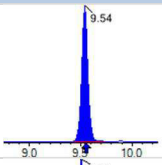
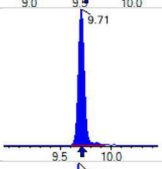
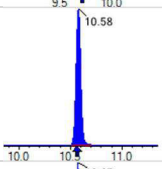
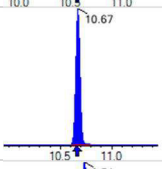
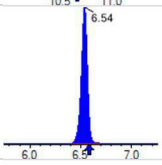
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 228715	(9.91 , N/A) (N/A , 0.00 , N/A)	530.8	N/A	1.4528 [1.0000]	145.3% { 109.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 144497	(10.14 , N/A) (N/A , 0.00 , N/A)	496.2	N/A	1.4618 [1.0000]	146.2% { 107.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 743679	(6.15 , N/A) (N/A , 0.01 , N/A)	875.6	N/A	2.5986 [2.0000]	129.9% { 109.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 360020	(8.07 , N/A) (N/A , 0.01 , N/A)	843.8	N/A	2.2354 [2.0000]	111.8% { 95.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 564546	(9.50 , N/A) (N/A , 0.01 , N/A)	490.7	N/A	2.3174 [2.0000]	115.9% { 94.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 73987	(5.85 , N/A) (N/A , 0.01 , N/A)	475.2	N/A	4.4234 [4.0000]	110.6% { 98.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 98160	(7.59 , N/A) (N/A , 0.02 , N/A)	696.0	N/A	4.7998 [4.0000]	120.0% { 97.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 104138	(9.01 , N/A) (N/A , 0.02 , N/A)	433.3	N/A	5.1039 [4.0000]	127.6% { 107.4% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 934647	(10.18 , N/A) (N/A , 0.01 , N/A)	921.5	N/A	2.5365 [2.0000]	126.8% { 105.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 225299	(10.61 , N/A) (N/A , 0.01 , N/A)	711.5	N/A	2.3820 [2.0000]	119.1% { 96.3% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 241321	(10.70 , N/A) (N/A , 0.01 , N/A)	1349.3	N/A	2.9407 [2.0000]	147.0% { 127.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03835-CCB5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-13A
Path: S2022-12-14A (54)
Acquired: 2022/12/14 - 22:34

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 276862	(9.54 , N/A) (N/A , 0.01 , N/A)	432.3	N/A	4.8017 [4.0000]	120.0% { 109.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 276650	(9.71 , N/A) (N/A , 0.01 , N/A)	214.9	N/A	5.3025 [4.0000]	132.6% { 112.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 533985	(10.58 , N/A) (N/A , 0.01 , N/A)	1055.0	N/A	29.4480 [20.0000]	147.2% { 131.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 259014	(10.67 , N/A) (N/A , 0.01 , N/A)	1091.8	N/A	28.5067 [20.0000]	142.5% { 118.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 721741	(6.54 , N/A) (N/A , 0.01 , N/A)	1025.5	N/A	11.2387 [8.0000]	140.5% { 108.6% }			

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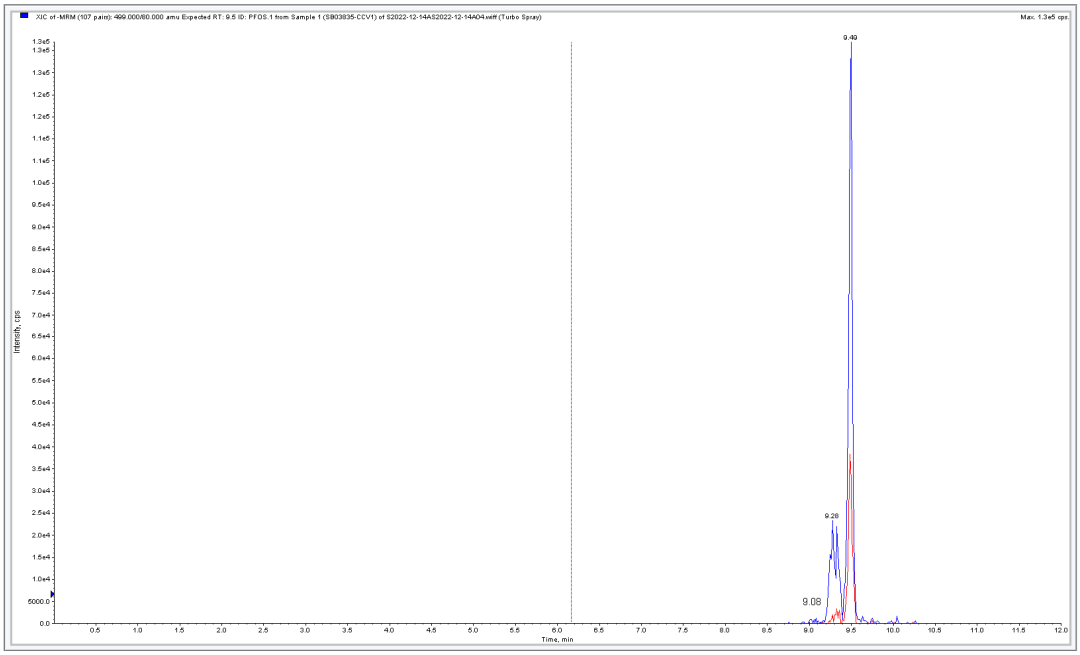
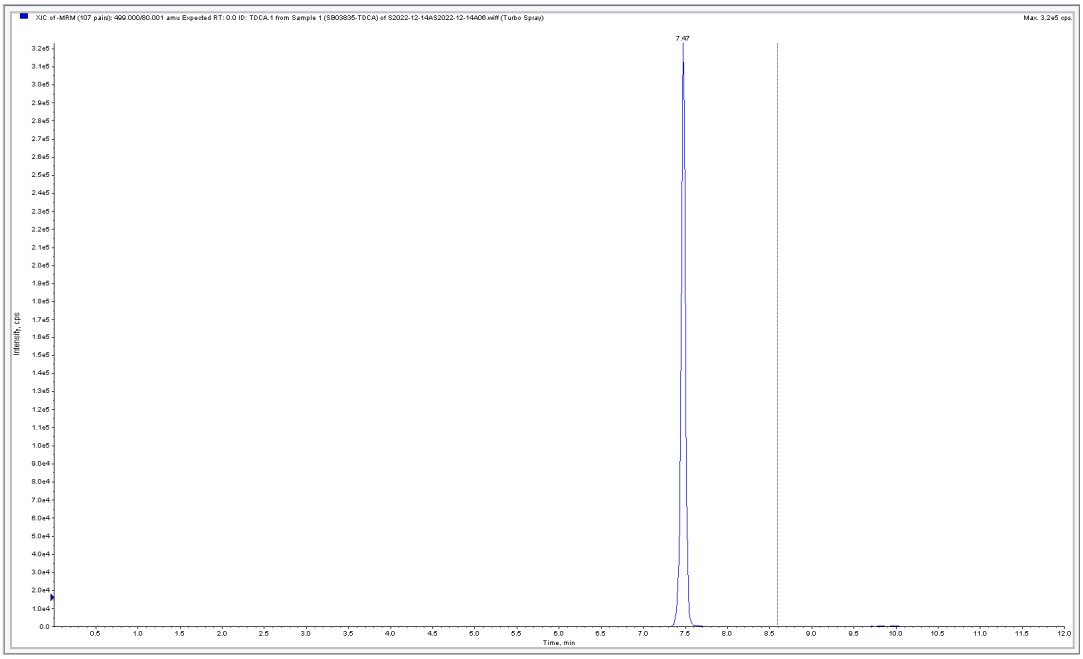
BILE STANDARD CHECK

S2022-12-14A



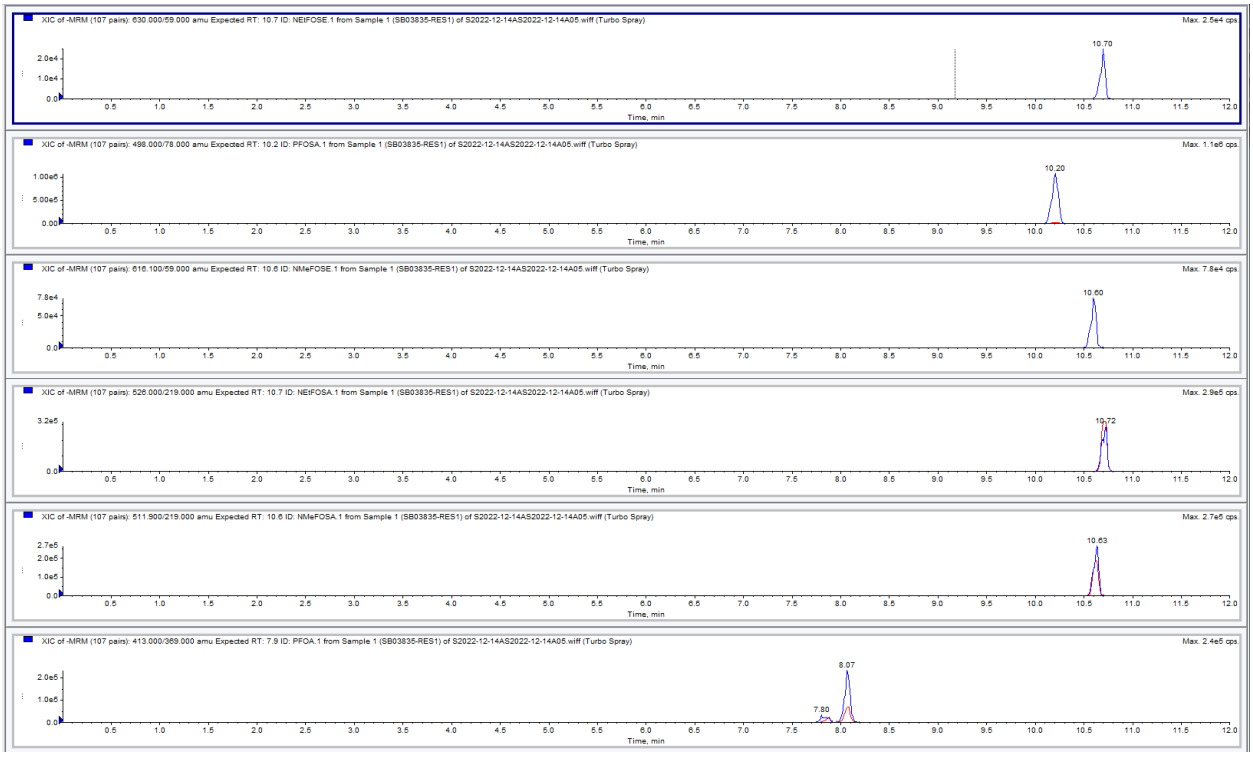


TDCA = 7.47

PFOS = 9.08

9.08-7.47=1.61 > 1.0 Pass

S2022-12-14A Column Resolution



QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-BLK1	File ID:	S2022-12-14A (5)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:12
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
PFBA	0.00080 U	0.0016	0.00080	0.00021	U
PFPEA	0.00040 U	0.00080	0.00040	0.000065	U
PFHXA	0.00020 U	0.00040	0.00020	0.000055	U
PFHPA	0.00020 U	0.00040	0.00020	0.000041	U
PFOA	0.00020 U	0.00040	0.00020	0.00015	U
PFNA	0.00020 U	0.00040	0.00020	0.000082	U
PFDA	0.00020 U	0.00040	0.00020	0.00010	U
PFUnA	0.00020 U	0.00040	0.00020	0.00016	U
PFDOA	0.00020 U	0.00040	0.00020	0.00011	U
PFTRDA	0.00030 U	0.00040	0.00030	0.00020	U
PFTEDA	0.00020 U	0.00040	0.00020	0.00020	U
PFBS	0.00020 U	0.00040	0.00020	0.000037	U
PFPES	0.00020 U	0.00040	0.00020	0.000063	U
PFHXS	0.00020 U	0.00040	0.00020	0.000032	U
PFHPS	0.00020 U	0.00040	0.00020	0.000051	U
PFOS	0.0000893 J	0.00040	0.00020	0.000064	IR2, J
PFNS	0.00020 U	0.00040	0.00020	0.00012	U
PFDS	0.00020 U	0.00040	0.00020	0.00015	U
PFDOS	0.00020 U	0.00040	0.00020	0.00012	U
4:2FTS	0.00080 U	0.0016	0.00080	0.00029	U
6:2FTS	0.00080 U	0.0016	0.00080	0.00031	U
8:2FTS	0.00080 U	0.0016	0.00080	0.000082	U
PFOSA	0.00020 U	0.00040	0.00020	0.00010	U
NMeFOSA	0.00080 U	0.0016	0.00080	0.00047	U
NEtFOSA	0.00080 U	0.0016	0.00080	0.00041	U
NMeFOSAA	0.00020 U	0.00040	0.00020	0.00011	U
NEtFOSAA	0.00020 U	0.00040	0.00020	0.00011	U
NMeFOSE	0.0012 U	0.0016	0.0012	0.0010	U
NEtFOSE	0.0012 U	0.0016	0.0012	0.0010	U
HFPO-DA	0.00040 U	[illegible]	[illegible]	[illegible]	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-BLK1	File ID:	S2022-12-14A (5)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:12
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

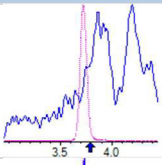
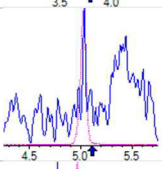
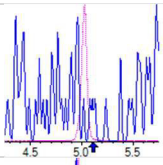
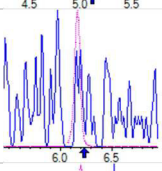
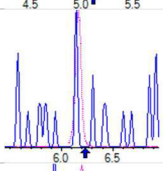
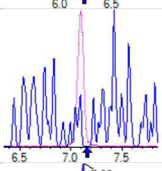
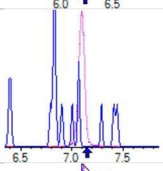
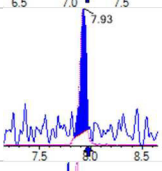
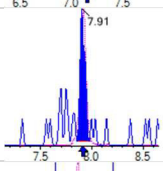
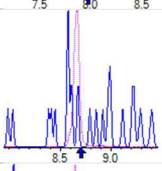
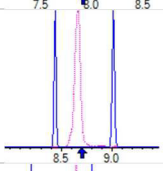
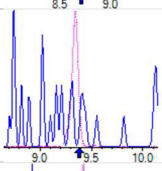
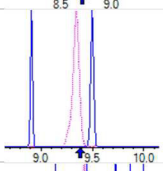
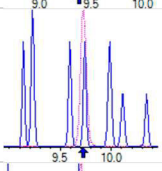
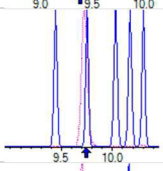
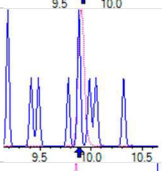
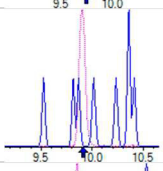
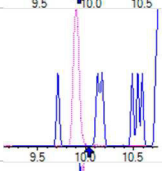
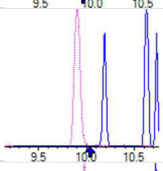
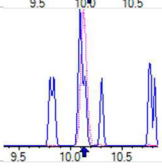
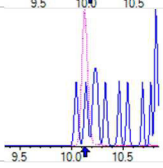
COMPOUND	CONC. (ug/L)	LOQ	LOD	DL	Q
ADONA	0.00040 U	0.00080	0.00040	0.00012	U
PFEESA	0.00040 U	0.00080	0.00040	0.00011	U
PFMPA	0.00040 U	0.00080	0.00040	0.000054	U
PFMBA	0.00040 U	0.00080	0.00040	0.000091	U
NFDHA	0.00040 U	0.00080	0.00040	0.00030	U
9CL-PF3ONS	0.00040 U	0.00080	0.00040	0.00021	U
11CL-PF3OUDS	0.00040 U	0.00080	0.00040	0.00021	U
3:3FTCA	0.00080 U	0.0016	0.00080	0.00057	U
5:3FTCA	0.00080 U	0.0016	0.00080	0.00044	U
7:3FTCA	0.00080 U	0.0016	0.00080	0.00055	U

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-n
Acquired: 2022/12/14 - 12:12

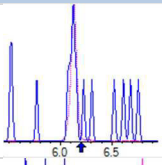
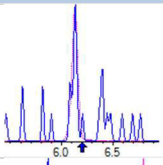
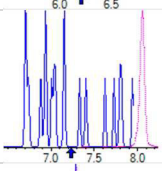
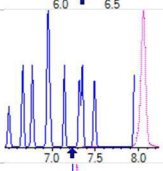
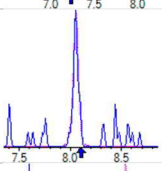
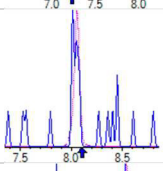
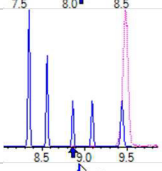
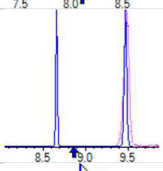
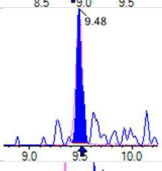
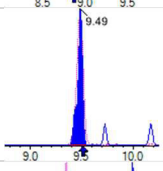
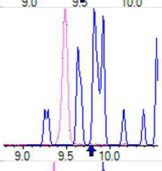
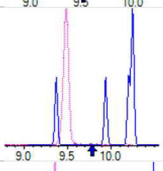
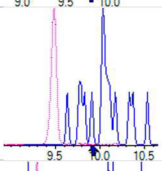
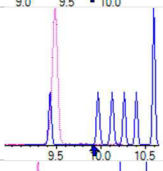
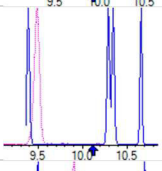
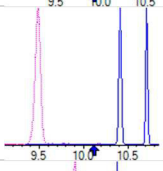
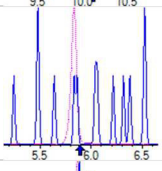
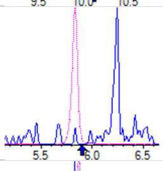
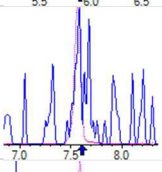
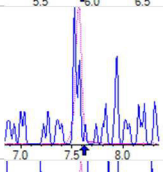
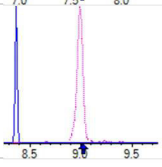
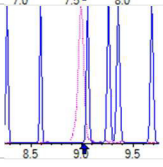
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(262.9 / 219.0) N/A (262.9 / 69.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 3524 (413.0 / 169.0) 865	(7.93 , 1.00) (0.01 , N/A , 1.4)	19.6 18.7	0.2456 73.2 84.3	0.0303	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-o
Acquired: 2022/12/14 - 12:12

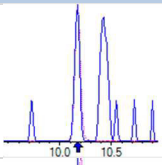
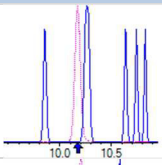
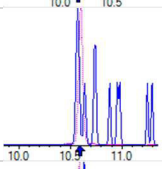
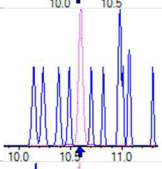
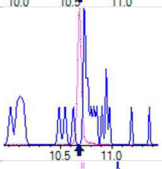
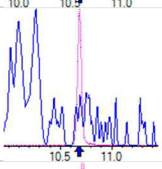
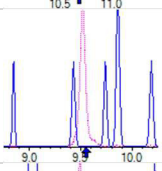
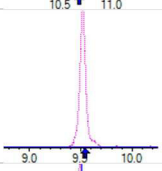
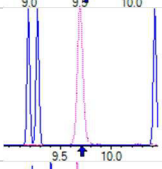
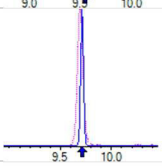
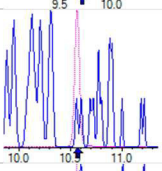
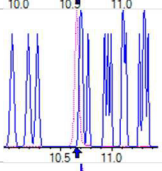
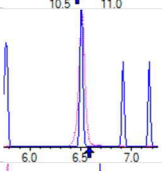
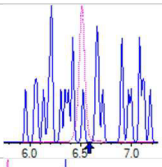
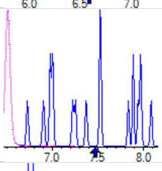
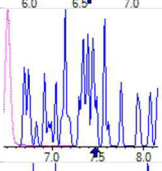
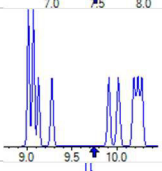
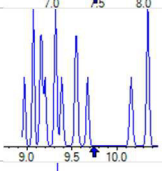
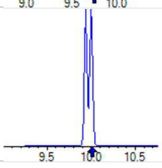
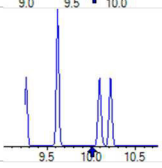
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 7442 (499.0 / 99.0) 2776	(9.48 , 1.00) (0.00 , N/A , -0.4)	27.5 300.3	0.3731 162.6 146.3	0.0223	N/A			IR2,
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(698.9 / 80.0) N/A (698.9 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-n
Acquired: 2022/12/14 - 12:12

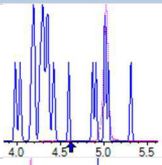
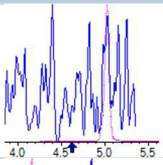
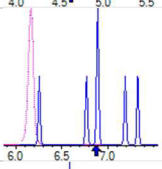
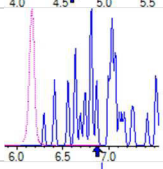
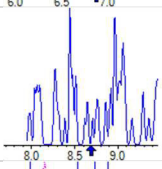
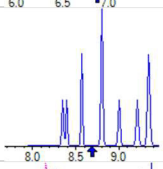
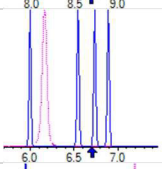
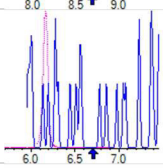
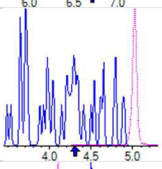
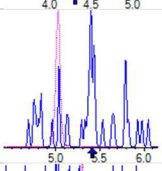
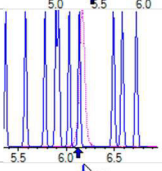
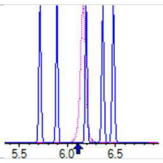
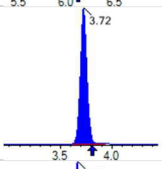
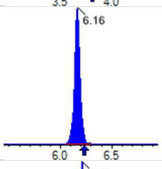
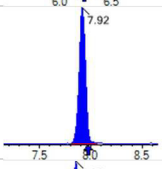
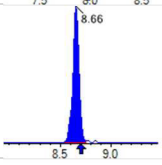
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.1 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-o
Acquired: 2022/12/14 - 12:12

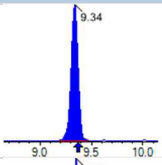
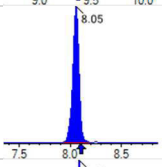
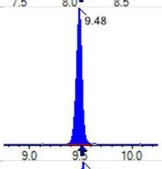
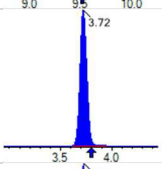
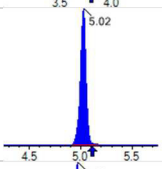
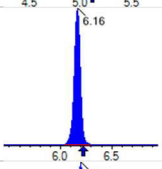
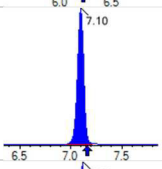
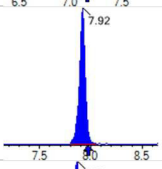
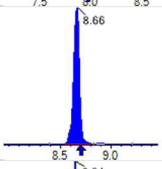
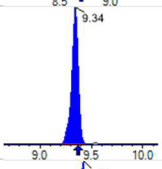
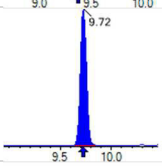
Analyte	(Q1 / Q3) Area Counts*min	R.T (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 83094	(3.72 , N/A) (N/A , 0.01 , N/A)	714.5	N/A	0.6848 [1.0000]	68.5% { 86.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 139638	(6.16 , N/A) (N/A , -0.01 , N/A)	601.9	N/A	0.7652 [1.0000]	76.5% { 79.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 129901	(7.92 , N/A) (N/A , 0.00 , N/A)	526.8	N/A	0.7441 [1.0000]	74.4% { 89.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 101065	(8.66 , N/A) (N/A , -0.01 , N/A)	297.5	N/A	0.7437 [1.0000]	74.4% { 86.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-
Acquired: 2022/12/14 - 12:12

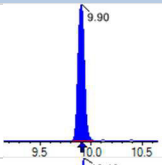
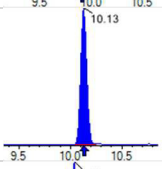
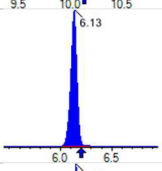
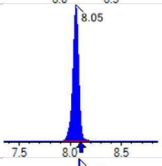
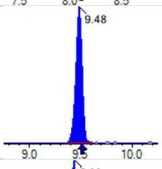
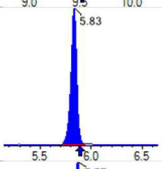
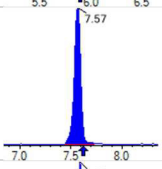
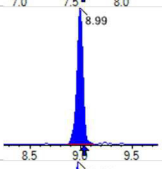
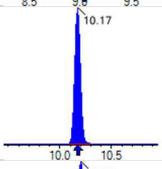
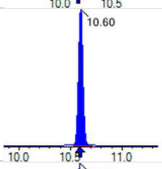
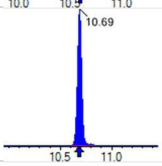
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 93694	(9.34 , N/A) (N/A , -0.01 , N/A)	423.8	N/A	0.6752 [1.0000]	67.5% { 71.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 236237	(8.05 , N/A) (N/A , 0.00 , N/A)	593.5	N/A	0.7320 [1.0000]	73.2% { 83.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 244568	(9.48 , N/A) (N/A , -0.01 , N/A)	559.7	N/A	0.9712 [1.0000]	97.1% { 96.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 666885	(3.72 , N/A) (N/A , 0.01 , N/A)	973.5	N/A	10.5288 [8.0000]	131.6% { 104.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 387023	(5.02 , N/A) (N/A , 0.00 , N/A)	811.6	N/A	5.0049 [4.0000]	125.1% { 118.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 296684	(6.16 , N/A) (N/A , -0.01 , N/A)	808.5	N/A	2.5211 [2.0000]	126.1% { 107.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 244524	(7.10 , N/A) (N/A , -0.01 , N/A)	588.7	N/A	2.3936 [2.0000]	119.7% { 105.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 232502	(7.92 , N/A) (N/A , 0.00 , N/A)	621.8	N/A	2.3342 [2.0000]	116.7% { 100.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 92043	(8.66 , N/A) (N/A , 0.00 , N/A)	448.8	N/A	1.1821 [1.0000]	118.2% { 89.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 136352	(9.34 , N/A) (N/A , 0.00 , N/A)	582.3	N/A	1.5174 [1.0000]	151.7% { 111.7% }			S2,
13C7_PFUnA_EIS	(570.0 / 525.0) 179292	(9.72 , N/A) (N/A , -0.01 , N/A)	470.0	N/A	1.4528 [1.0000]	145.3% { 102.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-
Acquired: 2022/12/14 - 12:12

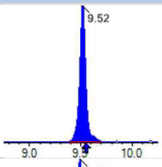
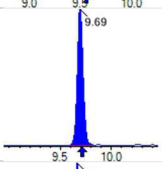
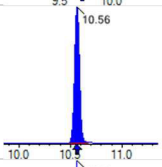
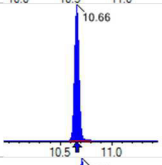
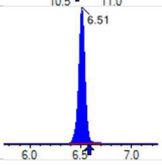
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 202375	(9.90 , N/A) (N/A , 0.00 , N/A)	463.1	N/A	1.3335 [1.0000]	133.3% { 96.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 135774	(10.13 , N/A) (N/A , -0.01 , N/A)	451.2	N/A	1.4248 [1.0000]	142.5% { 100.7% }			
13C3_PFBS_EIS	(302.0 / 80.0) 678338	(6.13 , N/A) (N/A , -0.01 , N/A)	839.0	N/A	2.4956 [2.0000]	124.8% { 99.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 390143	(8.05 , N/A) (N/A , 0.00 , N/A)	1263.0	N/A	2.5504 [2.0000]	127.5% { 103.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 606469	(9.48 , N/A) (N/A , -0.01 , N/A)	387.4	N/A	1.9917 [2.0000]	99.6% { 101.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 79802	(5.83 , N/A) (N/A , 0.00 , N/A)	432.1	N/A	5.0232 [4.0000]	125.6% { 106.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 88325	(7.57 , N/A) (N/A , -0.01 , N/A)	451.1	N/A	4.5471 [4.0000]	113.7% { 87.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 94998	(8.99 , N/A) (N/A , -0.01 , N/A)	306.5	N/A	4.9020 [4.0000]	122.5% { 97.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 850819	(10.17 , N/A) (N/A , 0.00 , N/A)	1018.9	N/A	1.8472 [2.0000]	92.4% { 96.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 107304	(10.60 , N/A) (N/A , 0.00 , N/A)	2331.8	N/A	0.9076 [2.0000]	45.4% { 45.9% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 95081	(10.69 , N/A) (N/A , 0.00 , N/A)	864.4	N/A	0.9269 [2.0000]	46.3% { 50.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A08.wiff-o
Acquired: 2022/12/14 - 12:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 260950	(9.52 , N/A) (N/A , -0.01 , N/A)	268.3	N/A	3.6207 [4.0000]	90.5% { 102.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 262400	(9.69 , N/A) (N/A , 0.00 , N/A)	370.6	N/A	4.0237 [4.0000]	100.6% { 106.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 279544	(10.56 , N/A) (N/A , 0.00 , N/A)	941.0	N/A	12.3333 [20.0000]	61.7% { 68.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 138261	(10.66 , N/A) (N/A , 0.00 , N/A)	1363.8	N/A	12.1738 [20.0000]	60.9% { 63.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 663986	(6.51 , N/A) (N/A , -0.01 , N/A)	699.4	N/A	9.2112 [8.0000]	115.1% { 99.9% }			

ANALYSIS DATA SHEET

LCS

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-BS1	File ID:	S2022-12-14A (6)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:25
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ug/L)	LOQ	DL	Q
PFBA	0.0174	0.0016	0.00021	
PFPEA	0.00875	0.00080	0.000065	
PFHXA	0.00439	0.00040	0.000055	
PFHPA	0.00463	0.00040	0.000041	
PFOA	0.00419	0.00040	0.00015	
PFNA	0.00499	0.00040	0.000082	
PFDA	0.00414	0.00040	0.00010	
PFUnA	0.00407	0.00040	0.00016	
PFDOA	0.00394	0.00040	0.00011	
PFTRDA	0.00374	0.00040	0.00020	
PFTEDA	0.00430	0.00040	0.00020	
PFBS	0.00412	0.00040	0.000037	
PFPES	0.00433	0.00040	0.000063	
PFHXS	0.00394	0.00040	0.000032	
PFHPS	0.00389	0.00040	0.000051	
PFOS	0.00421	0.00040	0.000064	
PFNS	0.00470	0.00040	0.00012	
PFDS	0.00395	0.00040	0.00015	
PFDOS	0.00398	0.00040	0.00012	
4:2FTS	0.0169	0.0016	0.00029	
6:2FTS	0.0180	0.0016	0.00031	
8:2FTS	0.0186	0.0016	0.000082	
PFOSA	0.00495	0.00040	0.00010	
NMeFOSA	0.0193	0.0016	0.00047	
NEtFOSA	0.0175	0.0016	0.00041	
NMeFOSAA	0.00443	0.00040	0.00011	
NEtFOSAA	0.00476	0.00040	0.00011	
NMeFOSE	0.0181	0.0016	0.0010	
NEtFOSE	0.0168	0.0016	0.0010	
HFPO-DA	0.00791	[illegible]	[illegible]	

ANALYSIS DATA SHEET

LCS

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-BS1	File ID:	S2022-12-14A (6)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:25
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

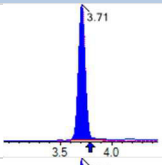
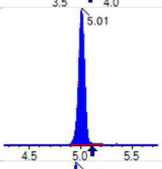
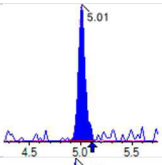
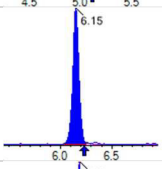
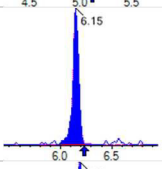
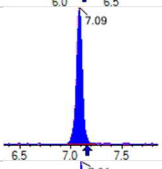
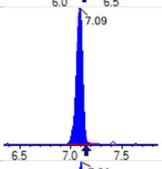
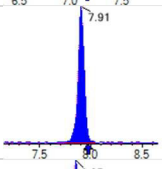
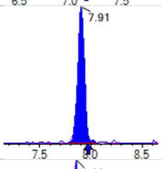
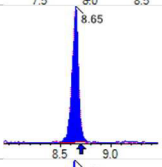
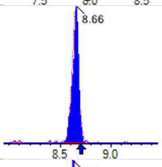
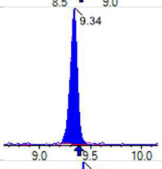
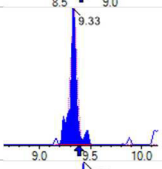
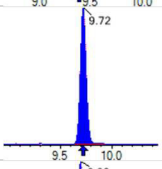
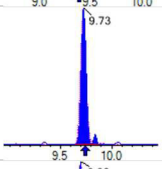
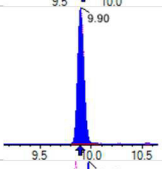
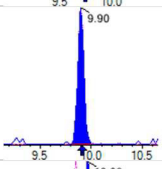
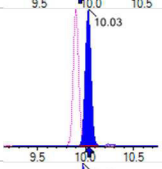
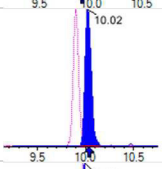
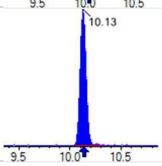
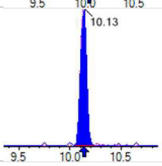
COMPOUND	CONC. (ug/L)	LOQ	DL	Q
ADONA	0.00806	0.00080	0.00012	
PFEESA	0.00745	0.00080	0.00011	
PFMPA	0.00855	0.00080	0.000054	
PFMBA	0.00848	0.00080	0.000091	
NFDHA	0.00868	0.00080	0.00030	
9CL-PF3ONS	0.00833	0.00080	0.00021	
11CL-PF3OUDS	0.00861	0.00080	0.00021	
3:3FTCA	0.0175	0.0016	0.00057	
5:3FTCA	0.0183	0.0016	0.00044	
7:3FTCA	0.0163	0.0016	0.00055	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-o
Acquired: 2022/12/14 - 12:25

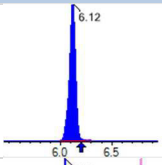
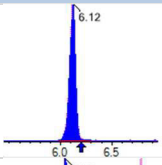
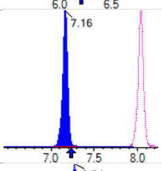
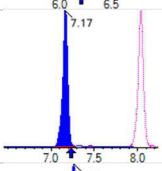
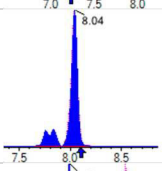
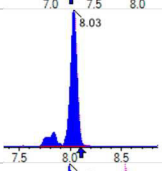
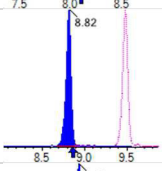
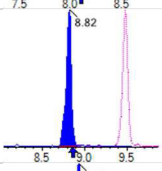
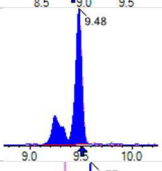
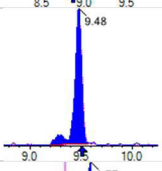
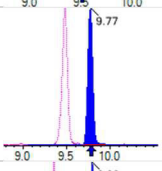
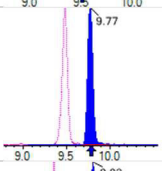
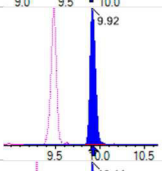
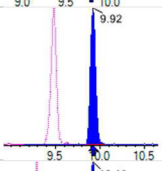
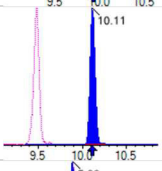
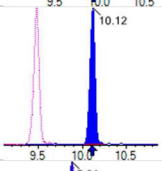
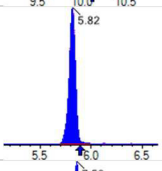
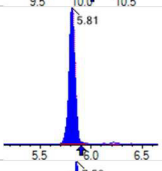
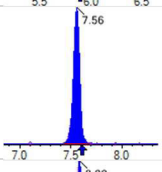
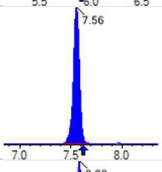
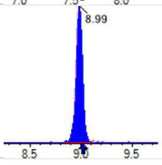
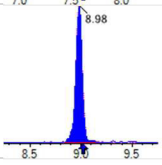
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 265061	(3.71 , 1.00) (0.00 , N/A , 0.0)	62.9	N/A 0.0 0.0	4.3585 [4.0000]	109.0%			
PFPeA	(262.9 / 219.0) 178511 (262.9 / 69.0) 2290	(5.01 , 1.00) (0.00 , N/A , 0.0)	688.5 51.1	0.0128 102.2 109.3	2.1871 [2.0000]	109.4%			
PFHxA	(313.0 / 269.0) 143291 (313.0 / 119.0) 13659	(6.15 , 1.00) (0.00 , N/A , -0.1)	396.6 152.0	0.0953 103.0 89.5	1.0966 [1.0000]	109.7%			
PFHpA	(363.0 / 319.0) 129407 (363.0 / 169.0) 36752	(7.09 , 1.00) (0.00 , N/A , -0.2)	368.9 473.5	0.2840 91.3 87.7	1.1583 [1.0000]	115.8%			
PFOA	(413.0 / 369.0) 139369 (413.0 / 169.0) 45612	(7.91 , 1.00) (0.00 , N/A , 0.0)	346.9 238.9	0.3273 97.5 112.3	1.0487 [1.0000]	104.9%			
PFNA	(463.0 / 419.0) 114850 (463.0 / 169.0) 21069	(8.65 , 1.00) (0.00 , N/A , -0.4)	293.3 68.0	0.1834 104.5 90.0	1.2468 [1.0000]	124.7%			
PFDA	(513.0 / 469.0) 129575 (513.0 / 169.0) 11540	(9.34 , 1.00) (0.00 , N/A , 0.3)	227.8 64.2	0.0891 88.5 68.0	1.0345 [1.0000]	103.4%			
PFUnA	(563.0 / 519.0) 188036 (563.0 / 169.0) 24214	(9.72 , 1.00) (0.00 , N/A , -0.4)	441.6 405.7	0.1288 140.7 148.3	1.0164 [1.0000]	101.6%			
PFDoA	(613.0 / 569.0) 198257 (613.0 / 169.0) 25846	(9.90 , 1.00) (0.00 , N/A , -0.1)	572.4 108.7	0.1304 101.7 91.6	0.9851 [1.0000]	98.5%			
PFTrDA	(663.0 / 619.0) 155205 (663.0 / 169.0) 33336	(10.03 , 1.01) (N/A , 0.00 , 0.2)	434.0 1133.0	0.2148 97.8 93.2	0.9354 [1.0000]	93.5%			
PFTeDA	(713.0 / 669.0) 123052 (713.0 / 169.0) 26626	(10.13 , 1.00) (0.00 , N/A , -0.4)	562.1 415.3	0.2164 116.3 123.3	1.0750 [1.0000]	107.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-
Acquired: 2022/12/14 - 12:25

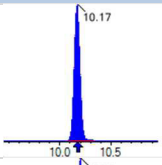
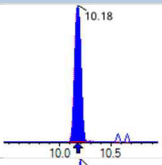
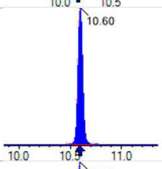
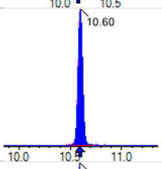
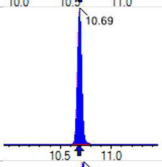
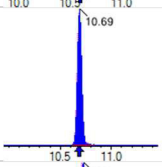
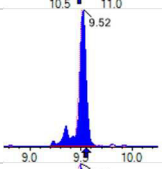
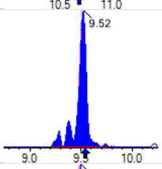
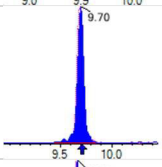
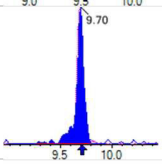
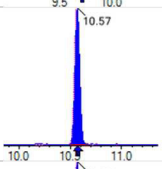
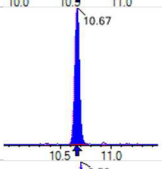
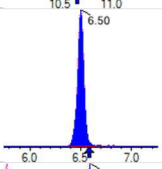
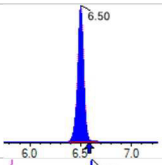
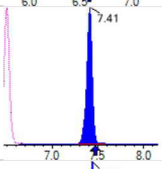
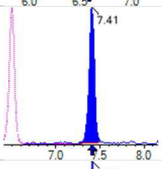
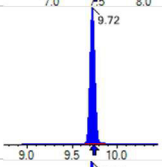
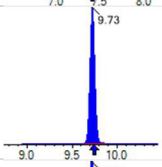
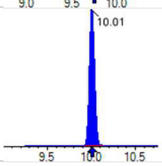
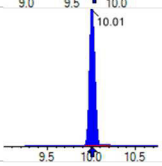
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 189034 (298.9 / 99.0) 134718	(6.12 , 1.00) (0.00 , N/A , 0.0)	577.4 511.3	0.7127 98.9 107.2	1.0301 [0.8847]	116.4%			
PFPeS	(349.0 / 80.0) 364203 (349.0 / 99.0) 136811	(7.16 , 0.89) (N/A , -0.02 , -0.1)	739.7 482.5	0.3756 100.3 100.3	1.0834 [0.9384]	115.5%			
PFHxS	(399.0 / 80.0) 301960 (399.0 / 99.0) 102264	(8.04 , 1.00) (0.00 , N/A , 0.5)	4888.9 5065727.8	0.3387 105.0 97.9	0.9840 [0.9110]	108.0%			
PFHpS	(449.0 / 80.0) 268415 (449.0 / 99.0) 74007	(8.82 , 0.93) (N/A , -0.01 , -0.2)	471.1 286.2	0.2757 89.8 92.2	0.9730 [0.9514]	102.3%			
PFOS	(499.0 / 80.0) 352543 (499.0 / 99.0) 85190	(9.48 , 1.00) (0.00 , N/A , 0.1)	96.3 112.1	0.2416 105.3 94.7	1.0516 [0.9275]	113.4%			
PFNS	(549.0 / 80.0) 485736 (549.0 / 99.0) 115669	(9.77 , 1.03) (N/A , -0.01 , 0.0)	636.0 320.2	0.2381 91.8 100.6	1.1759 [0.9599]	122.5%			
PFDS	(599.0 / 80.0) 536419 (599.0 / 99.0) 116939	(9.92 , 1.05) (N/A , -0.01 , -0.2)	628.1 390.1	0.2180 96.8 88.4	0.9878 [0.9631]	102.6%			
PFDoS	(698.9 / 80.0) 273400 (698.9 / 99.0) 67672	(10.11 , 1.07) (N/A , 0.00 , -0.1)	731.7 418.5	0.2475 122.2 122.7	0.9953 [0.9696]	102.7%			
4:2FTS	(327.0 / 307.0) 266063 (327.0 / 81.0) 162768	(5.82 , 1.00) (0.00 , N/A , 0.4)	662.0 446.3	0.6118 100.8 107.1	4.2195 [3.7381]	112.9%			
6:2FTS	(427.0 / 407.0) 161623 (427.0 / 81.0) 128454	(7.56 , 1.00) (0.00 , N/A , 0.1)	653.3 721.4	0.7948 122.3 107.1	4.4957 [3.7962]	118.4%			
8:2FTS	(527.0 / 507.0) 160962 (527.0 / 81.0) 93157	(8.99 , 1.00) (0.01 , N/A , 0.3)	390.5 269.4	0.5788 92.3 84.1	4.6522 [3.8332]	121.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-n
Acquired: 2022/12/14 - 12:25

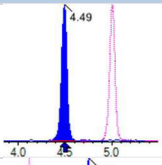
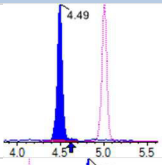
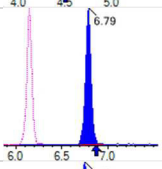
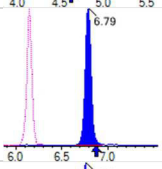
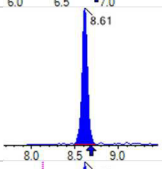
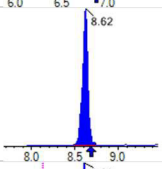
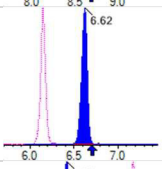
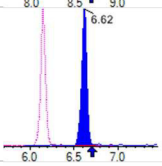
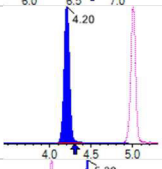
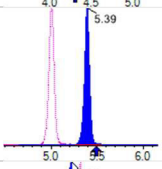
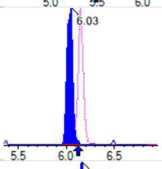
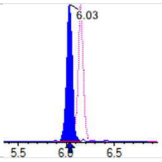
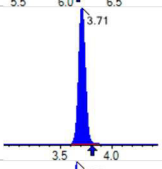
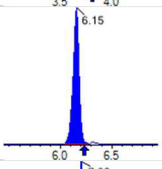
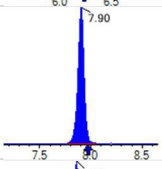
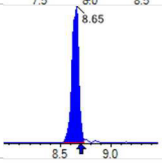
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 530005 (498.0 / 478.0) 9430	(10.17 , 1.00) (0.00 , N/A , -0.5)	1267.6 544.3	0.0178 78.2 64.4	1.2381 [1.0000]	123.8%			
NMeFOSA	(511.9 / 219.0) 241529 (511.9 / 169.0) 176918	(10.60 , 1.00) (0.00 , N/A , 0.0)	823.3 629.9	0.7325 114.8 114.8	4.8346 [4.0000]	120.9%			
NEtFOSA	(526.0 / 219.0) 214176 (526.0 / 169.0) 234217	(10.69 , 1.00) (0.00 , N/A , 0.1)	1347.0 1134.2	1.0936 102.4 100.7	4.3730 [4.0000]	109.3%			
NMeFOSAA	(570.0 / 419.0) 61278 (570.0 / 483.0) 29049	(9.52 , 1.00) (0.01 , N/A , -0.1)	562.4 870.3	0.4741 82.6 90.7	1.1083 [1.0000]	110.8%			
NEtFOSAA	(584.0 / 419.0) 69399 (584.0 / 526.0) 46701	(9.70 , 1.00) (0.01 , N/A , 0.1)	2434.4 897.0	0.6729 118.7 114.2	1.1908 [1.0000]	119.1%			
NMeFOSE	(616.1 / 59.0) 99772	(10.57 , 1.00) (0.01 , N/A , 0.0)	573.4	N/A 0.0 0.0	4.5291 [4.0000]	113.2%			
NEtFOSE	(630.0 / 59.0) 24191	(10.67 , 1.00) (0.01 , N/A , 0.0)	404.4	N/A 0.0 0.0	4.1920 [4.0000]	104.8%			
HFPO-DA	(285.0 / 169.0) 110663 (285.0 / 185.0) 369999	(6.50 , 1.00) (0.00 , N/A , 0.1)	386.6 788.7	3.3435 127.1 114.0	1.9766 [2.0000]	98.8%			
ADONA	(377.0 / 85.0) 480960 (377.0 / 251.0) 62790	(7.41 , 1.14) (N/A , -0.02 , 0.0)	633.7 225.2	0.1306 110.7 121.6	2.0144 [1.8854]	106.8%			
9Cl-Pf3ONS	(531.0 / 351.0) 1410061 (533.0 / 353.0) 502137	(9.72 , 1.50) (N/A , 0.00 , 0.0)	778.9 704.4	0.3561 122.8 114.2	2.0829 [1.8665]	111.6%			
11Cl-PF3OUDS	(631.0 / 451.0) 933676 (633.0 / 453.0) 312301	(10.01 , 1.54) (N/A , -0.01 , -0.1)	748.1 709.6	0.3345 106.0 96.5	2.1521 [1.8864]	114.1%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-o
Acquired: 2022/12/14 - 12:25

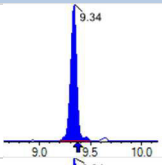
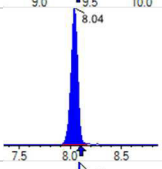
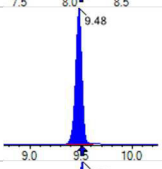
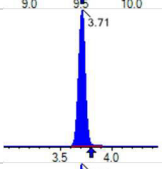
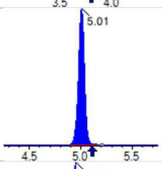
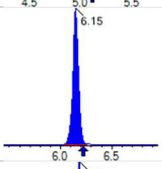
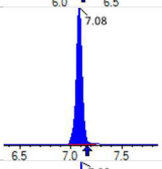
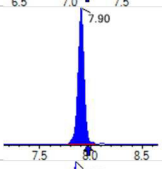
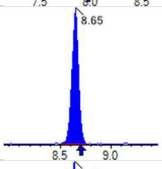
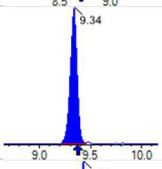
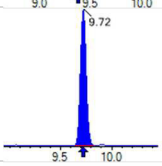
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 14999 (241.0 / 117.0) 25254	(4.49 , 0.90) (N/A , -0.02 , 0.1)	421.6 310.8	1.6837 102.7 91.8	4.3727 [4.0000]	109.3%			
5:3FTCA	(341.0 / 236.7) 119439 (341.0 / 217.0) 192723	(6.79 , 1.10) (N/A , -0.02 , 0.2)	474.7 483.8	1.6136 102.4 104.3	4.5682 [4.0000]	114.2%			
7:3FTCA	(441.0 / 317.0) 133373 (441.0 / 337.0) 108185	(8.61 , 1.40) (N/A , -0.02 , -0.4)	291.5 344.6	0.8111 96.8 100.0	4.0771 [4.0000]	101.9%			
PFEESA	(315.0 / 135.0) 264846 (315.0 / 83.0) 82146	(6.62 , 1.08) (N/A , -0.03 , 0.2)	730.0 373.2	0.3102 101.2 101.1	1.8613 [1.7849]	104.3%			
PFMPA	(229.0 / 85.0) 47332	(4.20 , 0.84) (N/A , -0.02 , 0.0)	874.5	N/A 0.0 0.0	2.1363 [2.0000]	106.8%			
PFMBA	(279.0 / 85.0) 157122	(5.39 , 1.08) (N/A , -0.03 , 0.0)	845.3	N/A 0.0 0.0	2.1190 [2.0000]	106.0%			
NFDHA	(201.0 / 85.0) 6075 (295.0 / 201.0) 45705	(6.03 , 0.98) (N/A , -0.02 , 0.1)	372.6 324.1	7.5237 114.2 103.8	2.1689 [2.0000]	108.4%			
13C3_PFBA_IIS	(216.0 / 172.0) 92865	(3.71 , N/A) (N/A , 0.00 , N/A)	999.5	N/A	0.7654 [1.0000]	76.5% { 96.5% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 124097	(6.15 , N/A) (N/A , -0.02 , N/A)	495.7	N/A	0.6800 [1.0000]	68.0% { 70.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 128574	(7.90 , N/A) (N/A , -0.02 , N/A)	493.3	N/A	0.7365 [1.0000]	73.7% { 88.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 110689	(8.65 , N/A) (N/A , -0.02 , N/A)	447.4	N/A	0.8146 [1.0000]	81.5% { 94.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-o
Acquired: 2022/12/14 - 12:25

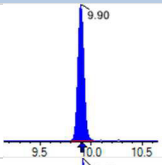
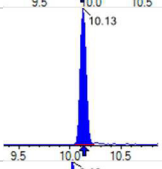
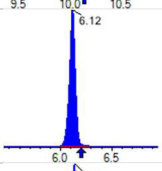
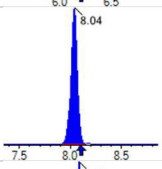
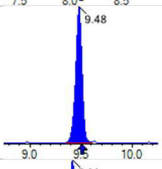
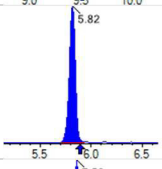
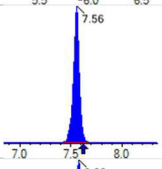
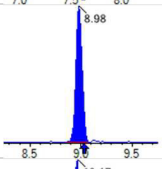
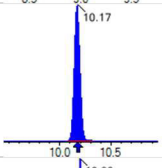
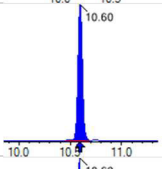
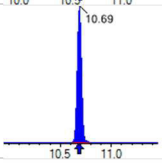
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 90001	(9.34 , N/A) (N/A , -0.01 , N/A)	241.5	N/A	0.6486 [1.0000]	64.9% { 68.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 224345	(8.04 , N/A) (N/A , -0.02 , N/A)	625.7	N/A	0.6951 [1.0000]	69.5% { 79.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 227149	(9.48 , N/A) (N/A , -0.01 , N/A)	283.0	N/A	0.9020 [1.0000]	90.2% { 89.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 692594	(3.71 , N/A) (N/A , 0.00 , N/A)	997.3	N/A	9.7841 [8.0000]	122.3% { 108.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 367800	(5.01 , N/A) (N/A , -0.02 , N/A)	829.4	N/A	5.3520 [4.0000]	133.8% { 112.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 294891	(6.15 , N/A) (N/A , -0.03 , N/A)	614.5	N/A	2.8197 [2.0000]	141.0% { 106.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 241423	(7.08 , N/A) (N/A , -0.02 , N/A)	631.3	N/A	2.6592 [2.0000]	133.0% { 103.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 265968	(7.90 , N/A) (N/A , -0.02 , N/A)	733.4	N/A	2.6977 [2.0000]	134.9% { 114.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 101044	(8.65 , N/A) (N/A , -0.02 , N/A)	436.4	N/A	1.1849 [1.0000]	118.5% { 98.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 123878	(9.34 , N/A) (N/A , -0.01 , N/A)	378.2	N/A	1.4351 [1.0000]	143.5% { 101.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 213264	(9.72 , N/A) (N/A , -0.01 , N/A)	510.3	N/A	1.7989 [1.0000]	179.9% { 122.1% }			S2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-
Acquired: 2022/12/14 - 12:25

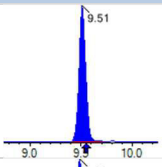
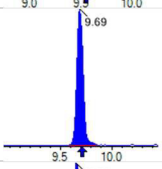
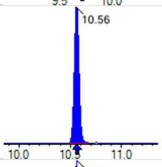
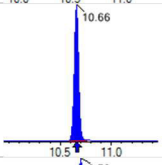
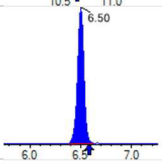
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 232400	(9.90 , N/A) (N/A , -0.01 , N/A)	492.8	N/A	1.5941 [1.0000]	159.4% { 111.1% }			S2,
13C2_PFTeDA_EIS	(715.0 / 670.0) 125249	(10.13 , N/A) (N/A , -0.01 , N/A)	303.9	N/A	1.3683 [1.0000]	136.8% { 92.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 649550	(6.12 , N/A) (N/A , -0.03 , N/A)	718.2	N/A	2.5163 [2.0000]	125.8% { 95.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 382120	(8.04 , N/A) (N/A , -0.02 , N/A)	1021.1	N/A	2.6304 [2.0000]	131.5% { 101.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 609755	(9.48 , N/A) (N/A , -0.01 , N/A)	393.5	N/A	2.1560 [2.0000]	107.8% { 102.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 77353	(5.82 , N/A) (N/A , -0.02 , N/A)	496.7	N/A	5.1271 [4.0000]	128.2% { 103.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 88225	(7.56 , N/A) (N/A , -0.02 , N/A)	734.7	N/A	4.7827 [4.0000]	119.6% { 87.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 97177	(8.98 , N/A) (N/A , -0.02 , N/A)	332.6	N/A	5.2802 [4.0000]	132.0% { 100.2% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 872813	(10.17 , N/A) (N/A , 0.00 , N/A)	1051.2	N/A	2.0403 [2.0000]	102.0% { 98.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 120100	(10.60 , N/A) (N/A , 0.00 , N/A)	685.7	N/A	1.0937 [2.0000]	54.7% { 51.4% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 105967	(10.69 , N/A) (N/A , 0.00 , N/A)	793.3	N/A	1.1123 [2.0000]	55.6% { 56.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A09.wiff-o
Acquired: 2022/12/14 - 12:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 286103	(9.51 , N/A) (N/A , -0.02 , N/A)	332.1	N/A	4.2741 [4.0000]	106.9% { 112.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 267798	(9.69 , N/A) (N/A , -0.01 , N/A)	401.5	N/A	4.4213 [4.0000]	110.5% { 109.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 326564	(10.56 , N/A) (N/A , -0.01 , N/A)	824.3	N/A	15.5127 [20.0000]	77.6% { 80.4% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 170594	(10.66 , N/A) (N/A , 0.00 , N/A)	1738.7	N/A	16.1725 [20.0000]	80.9% { 78.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 724269	(6.50 , N/A) (N/A , -0.02 , N/A)	795.9	N/A	11.3058 [8.0000]	141.3% { 109.0% }			

ANALYSIS DATA SHEET

MRL Check

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-MRL1	File ID:	S2022-12-14A (7)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:37
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ug/L)	LOQ	DL	Q
PFBA	0.00163	0.0016	0.00021	
PFPEA	0.000858	0.00080	0.000065	
PFHXA	0.000464	0.00040	0.000055	IR2
PFHPA	0.000492	0.00040	0.000041	
PFOA	0.000599	0.00040	0.00015	
PFNA	0.000535	0.00040	0.000082	
PFDA	0.000571	0.00040	0.00010	IR1
PFUnA	0.000413	0.00040	0.00016	IR2
PFDOA	0.000388	0.00040	0.00011	IR1, J
PFTRDA	0.000509	0.00040	0.00020	
PFTEDA	0.000402	0.00040	0.00020	IR2
PFBS	0.000448	0.00040	0.000037	
PFPES	0.000363	0.00040	0.000063	J
PFHXS	0.000414	0.00040	0.000032	MI5
PFHPS	0.000337	0.00040	0.000051	J
PFOS	0.000544	0.00040	0.000064	MI5
PFNS	0.000388	0.00040	0.00012	J
PFDS	0.000383	0.00040	0.00015	J
PFDOS	0.000499	0.00040	0.00012	
4:2FTS	0.00173	0.0016	0.00029	
6:2FTS	0.00195	0.0016	0.00031	
8:2FTS	0.00182	0.0016	0.000082	
PFOSA	0.000542	0.00040	0.00010	
NMeFOSA	0.00169	0.0016	0.00047	
NEtFOSA	0.00163	0.0016	0.00041	
NMeFOSAA	0.000446	0.00040	0.00011	IR2
NEtFOSAA	0.000400	0.00040	0.00011	
NMeFOSE	0.00174	0.0016	0.0010	
NEtFOSE	0.00237	0.0016	0.0010	
HFPO-DA	0.000910	[illegible]	[illegible]	

ANALYSIS DATA SHEET

MRL Check

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0205-MRL1	File ID:	S2022-12-14A (7)
Sampled:		Prepared:	12/09/22 14:19	Analyzed:	12/14/22 12:37
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0205	Sequence:	SB03835	Calibration:	2251013
Instrument:	Saphira				
Column:	1				

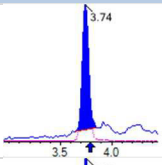
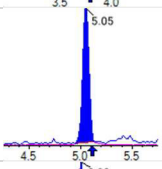
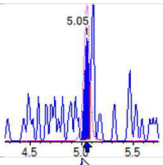
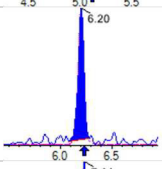
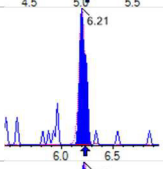
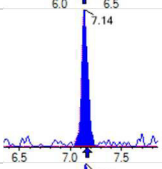
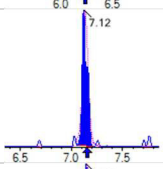
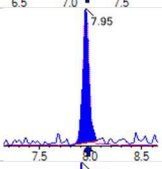
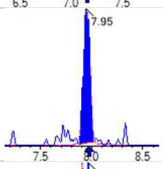
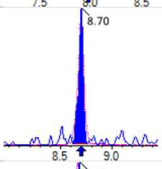
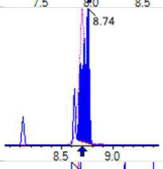
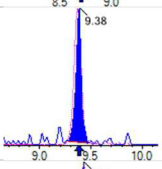
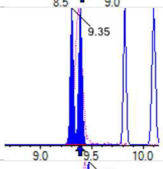
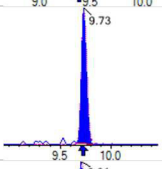
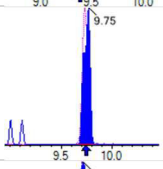
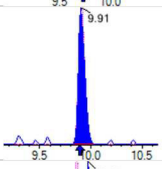
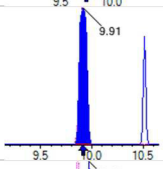
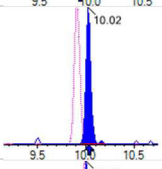
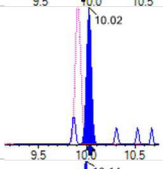
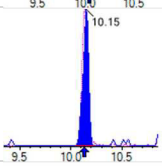
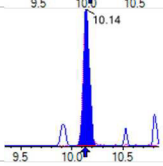
COMPOUND	CONC. (ug/L)	LOQ	DL	Q
ADONA	0.000884	0.00080	0.00012	
PFEESA	0.000718	0.00080	0.00011	J
PFMPA	0.000957	0.00080	0.000054	
PFMBA	0.000913	0.00080	0.000091	
NFDHA	0.000282	0.00080	0.00020	BS1, J
9CL-PF3ONS	0.000879	0.00080	0.00021	
11CL-PF3OUDS	0.000917	0.00080	0.00021	
3:3FTCA	0.00198	0.0016	0.00057	
5:3FTCA	0.00226	0.0016	0.00044	
7:3FTCA	0.00162	0.0016	0.00055	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-
Acquired: 2022/12/14 - 12:37

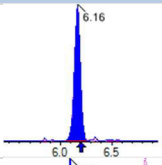
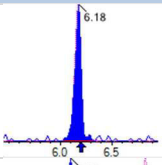
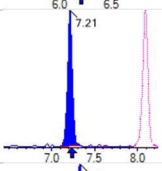
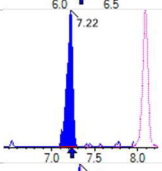
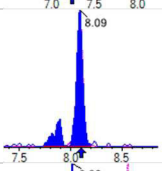
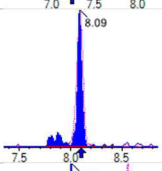
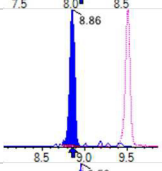
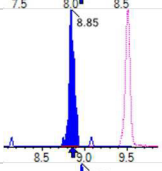
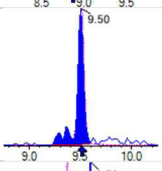
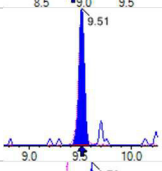
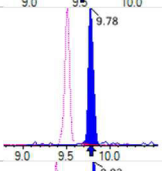
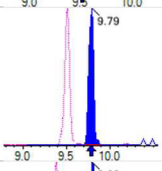
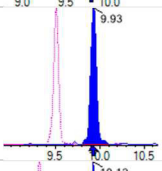
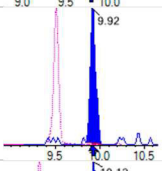
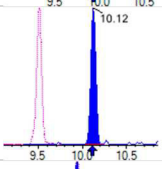
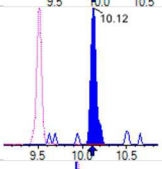
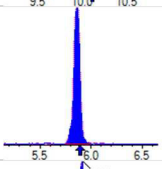
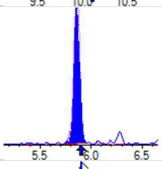
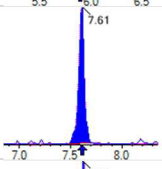
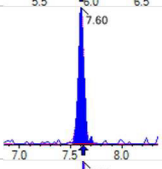
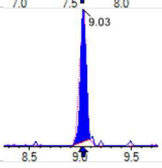
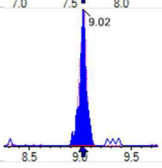
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 22887	(3.74 , 1.00) (0.00 , N/A , 0.0)	41.4	N/A 0.0 0.0	0.4077 [0.4000]	101.9%			
PFPeA	(262.9 / 219.0) 16604 (262.9 / 69.0) 165	(5.05 , 1.00) (0.00 , N/A , -0.1)	141.3 8.0	0.0099 79.1 84.5	0.2145 [0.2000]	107.2%			
PFHxA	(313.0 / 269.0) 14911 (313.0 / 119.0) 2238	(6.20 , 1.00) (0.00 , N/A , -0.1)	65.3 44.6	0.1501 162.1 140.9	0.1161 [0.1000]	116.1%			IR2,
PFHpA	(363.0 / 319.0) 15036 (363.0 / 169.0) 4372	(7.14 , 1.00) (0.00 , N/A , 0.8)	63.1 85.4	0.2907 93.4 89.8	0.1231 [0.1000]	123.1%			
PFOA	(413.0 / 369.0) 20076 (413.0 / 169.0) 5598	(7.95 , 1.00) (0.00 , N/A , 0.0)	77.1 56.5	0.2788 83.1 95.7	0.1497 [0.1000]	149.7%			QC,
PFNA	(463.0 / 419.0) 13233 (463.0 / 169.0) 2042	(8.70 , 1.00) (0.00 , N/A , -2.3)	50.5 20.4	0.1543 87.9 75.7	0.1336 [0.1000]	133.6%			QC,
PFDA	(513.0 / 469.0) 16556 (513.0 / 169.0) 556	(9.38 , 1.00) (0.01 , N/A , 2.1)	51.2 47.9	0.0336 33.4 25.7	0.1428 [0.1000]	142.8%			QC,IR1,
PFUnA	(563.0 / 519.0) 17689 (563.0 / 169.0) 3115	(9.73 , 1.00) (0.00 , N/A , -1.4)	126.1 254.2	0.1761 192.4 202.8	0.1033 [0.1000]	103.3%			IR2,
PFDoA	(613.0 / 569.0) 19079 (613.0 / 169.0) 852	(9.91 , 1.00) (0.00 , N/A , -0.5)	98.0 4110.2	0.0446 34.8 31.4	0.0969 [0.1000]	96.9%			IR1,
PFTrDA	(663.0 / 619.0) 20643 (663.0 / 169.0) 3812	(10.02 , 1.01) (N/A , 0.00 , 0.2)	205.7 84.1	0.1846 84.1 80.1	0.1271 [0.1000]	127.1%			
PFTeDA	(713.0 / 669.0) 10973 (713.0 / 169.0) 4073	(10.15 , 1.00) (0.02 , N/A , 0.5)	142.8 80.5	0.3712 199.5 211.5	0.1006 [0.1000]	100.6%			IR2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-n
Acquired: 2022/12/14 - 12:37

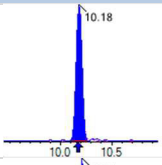
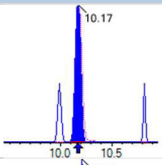
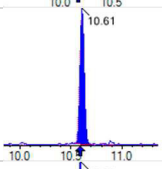
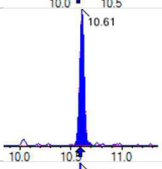
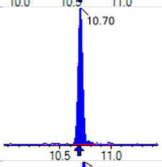
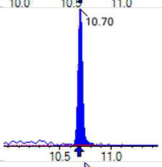
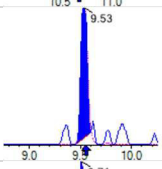
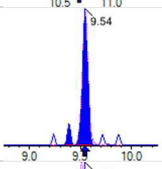
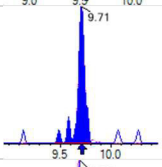
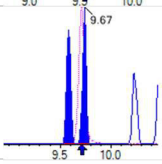
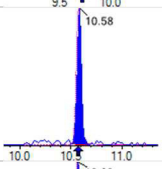
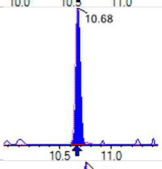
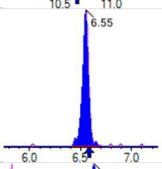
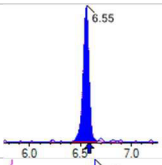
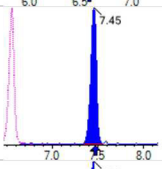
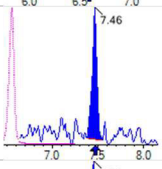
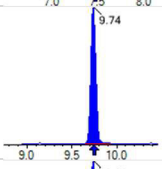
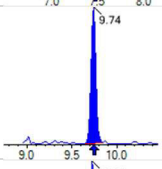
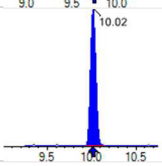
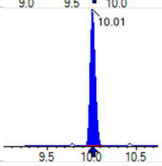
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 21639 (298.9 / 99.0) 12886	(6.16 , 1.00) (0.00 , N/A , -0.6)	222.6 101.1	0.5955 82.7 89.6	0.1121 [0.0885]	126.7%			
PFPeS	(349.0 / 80.0) 31990 (349.0 / 99.0) 11757	(7.21 , 0.89) (N/A , 0.03 , -0.2)	249.9 154.4	0.3675 98.1 98.1	0.0908 [0.0938]	96.8%			
PFHxS	(399.0 / 80.0) 33272 (399.0 / 99.0) 12205	(8.09 , 1.00) (0.00 , N/A , 0.1)	952448.5 77799.1	0.3668 113.7 106.1	0.1035 [0.0911]	113.6%			MI5 DG 2022-12-14
PFHpS	(449.0 / 80.0) 25142 (449.0 / 99.0) 7530	(8.86 , 0.93) (N/A , 0.03 , 0.5)	111.7 180.4	0.2995 97.6 100.2	0.0843 [0.0951]	88.6%			
PFOS	(499.0 / 80.0) 49298 (499.0 / 99.0) 9901	(9.50 , 1.00) (-0.01 , N/A , -0.5)	7607.5 65.6	0.2008 87.5 78.7	0.1360 [0.0927]	146.6%			QC,MI5 DG 2022-12-14
PFNS	(549.0 / 80.0) 43376 (549.0 / 99.0) 12485	(9.78 , 1.03) (N/A , 0.00 , -0.4)	148.6 196.1	0.2878 111.0 121.6	0.0971 [0.0960]	101.1%			
PFDS	(599.0 / 80.0) 56196 (599.0 / 99.0) 10706	(9.93 , 1.04) (N/A , 0.01 , 0.6)	204.7 79.3	0.1905 84.6 77.2	0.0957 [0.0963]	99.3%			
PFDoS	(698.9 / 80.0) 37047 (698.9 / 99.0) 7248	(10.12 , 1.06) (N/A , 0.00 , 0.0)	220.5 64.1	0.1957 96.6 97.0	0.1247 [0.0970]	128.6%			
4:2FTS	(327.0 / 307.0) 27927 (327.0 / 81.0) 18800	(5.86 , 1.00) (0.00 , N/A , 0.2)	472.0 141.5	0.6732 110.9 117.9	0.4314 [0.3738]	115.4%			
6:2FTS	(427.0 / 407.0) 19239 (427.0 / 81.0) 14426	(7.61 , 1.00) (0.00 , N/A , 0.3)	207.9 117.9	0.7498 115.4 101.0	0.4874 [0.3796]	128.4%			
8:2FTS	(527.0 / 507.0) 14267 (527.0 / 81.0) 11007	(9.03 , 1.00) (0.00 , N/A , 0.1)	22.5 93.8	0.7715 123.1 112.1	0.4550 [0.3833]	118.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-n
Acquired: 2022/12/14 - 12:37

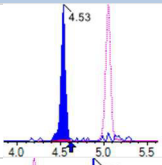
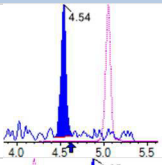
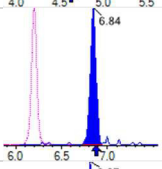
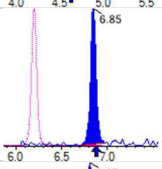
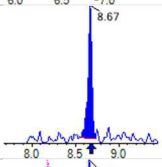
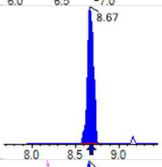
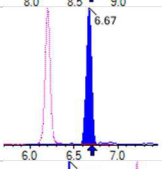
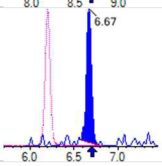
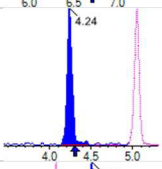
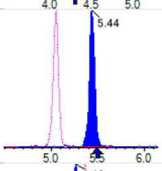
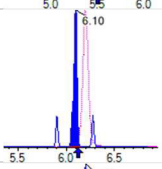
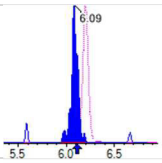
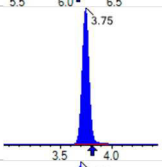
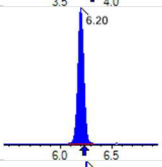
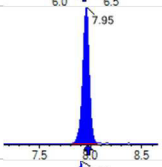
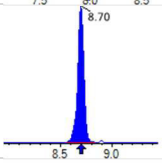
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 58409 (498.0 / 478.0) 1227	(10.18 , 1.00) (0.00 , N/A , 0.7)	23.2 693.4	0.0210 92.3 76.0	0.1355 [0.1000]	135.5%			QC,
NMeFOSA	(511.9 / 219.0) 21078 (511.9 / 169.0) 12495	(10.61 , 1.00) (0.00 , N/A , 0.0)	252.1 191.8	0.5928 92.9 92.9	0.4221 [0.4000]	105.5%			
NEtFOSA	(526.0 / 219.0) 19299 (526.0 / 169.0) 20225	(10.70 , 1.00) (0.00 , N/A , 0.0)	333.1 165.1	1.0480 98.2 96.5	0.4079 [0.4000]	102.0%			
NMeFOSAA	(570.0 / 419.0) 6507 (570.0 / 483.0) 6283	(9.53 , 1.00) (-0.01 , N/A , -0.7)	10.0 2141.4	0.9655 168.2 184.7	0.1114 [0.1000]	111.4%			IR2,
NEtFOSAA	(584.0 / 419.0) 6622 (584.0 / 526.0) 2650	(9.71 , 1.00) (0.00 , N/A , 2.5)	369.9 555.6	0.4002 70.6 67.9	0.1001 [0.1000]	100.1%			
NMeFOSE	(616.1 / 59.0) 9259	(10.58 , 1.00) (0.01 , N/A , 0.0)	123.5	N/A 0.0 0.0	0.4350 [0.4000]	108.8%			
NEtFOSE	(630.0 / 59.0) 3290	(10.68 , 1.00) (0.01 , N/A , 0.0)	150.6	N/A 0.0 0.0	0.5919 [0.4000]	148.0%			QC,
HFPO-DA	(285.0 / 169.0) 12438 (285.0 / 185.0) 37766	(6.55 , 1.00) (-0.01 , N/A , -0.4)	220.0 196.6	3.0364 115.4 103.6	0.2274 [0.2000]	113.7%			
ADONA	(377.0 / 85.0) 51557 (377.0 / 251.0) 5810	(7.45 , 1.14) (N/A , 0.03 , -0.6)	373.1 32.9	0.1127 95.6 104.9	0.2211 [0.1885]	117.3%			
9Cl-Pf3ONS	(531.0 / 351.0) 145331 (533.0 / 353.0) 43804	(9.74 , 1.49) (N/A , 0.01 , -0.1)	361.3 141.0	0.3014 104.0 96.7	0.2198 [0.1867]	117.8%			
11Cl-PF3OUDS	(631.0 / 451.0) 97170 (633.0 / 453.0) 29212	(10.02 , 1.53) (N/A , 0.00 , 0.3)	879.5 1035.0	0.3006 95.3 86.8	0.2293 [0.1886]	121.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-o
Acquired: 2022/12/14 - 12:37

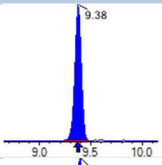
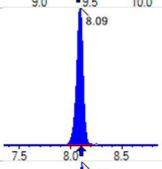
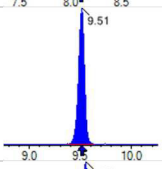
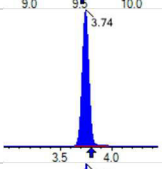
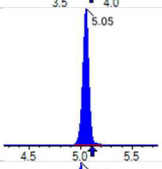
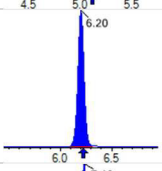
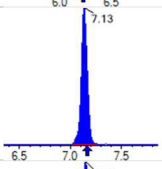
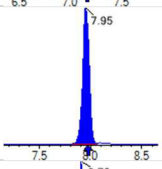
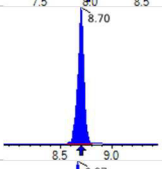
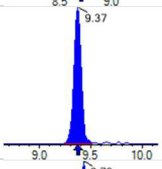
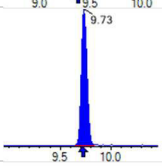
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1612 (241.0 / 117.0) 2773	(4.53 , 0.90) (N/A , 0.02 , -0.3)	104.7 50.6	1.7200 104.9 93.7	0.4954 [0.4000]	123.9%			
5:3FTCA	(341.0 / 236.7) 14495 (341.0 / 217.0) 24677	(6.84 , 1.10) (N/A , 0.03 , -0.1)	21.2 99.4	1.7025 108.0 110.0	0.5639 [0.4000]	141.0%			QC,
7:3FTCA	(441.0 / 317.0) 13043 (441.0 / 337.0) 9628	(8.67 , 1.40) (N/A , 0.04 , -0.1)	51.9 936.1	0.7382 88.1 91.0	0.4056 [0.4000]	101.4%			
PFEESA	(315.0 / 135.0) 25115 (315.0 / 83.0) 8341	(6.67 , 1.08) (N/A , 0.03 , 0.1)	280.7 58.9	0.3321 108.3 108.3	0.1795 [0.1785]	100.6%			
PFMPA	(229.0 / 85.0) 5030	(4.24 , 0.84) (N/A , 0.02 , 0.0)	178.1	N/A 0.0 0.0	0.2393 [0.2000]	119.7%			
PFMBA	(279.0 / 85.0) 16060	(5.44 , 1.08) (N/A , 0.02 , 0.0)	409.7	N/A 0.0 0.0	0.2283 [0.2000]	114.2%			
NFDHA	(201.0 / 85.0) 507 (295.0 / 201.0) 2726	(6.10 , 0.98) (N/A , 0.04 , 0.6)	1283.6 104.0	5.3815 81.7 74.3	0.0705 [0.2000]	35.3%			QC,
13C3_PFBA_IIS	(216.0 / 172.0) 88383	(3.75 , N/A) (N/A , 0.03 , N/A)	768.6	N/A	0.7284 [1.0000]	72.8% { 91.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 148857	(6.20 , N/A) (N/A , 0.02 , N/A)	523.2	N/A	0.8157 [1.0000]	81.6% { 85.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 132284	(7.95 , N/A) (N/A , 0.03 , N/A)	497.4	N/A	0.7578 [1.0000]	75.8% { 91.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 110723	(8.70 , N/A) (N/A , 0.03 , N/A)	364.2	N/A	0.8148 [1.0000]	81.5% { 94.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-o
Acquired: 2022/12/14 - 12:37

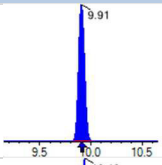
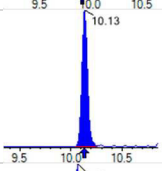
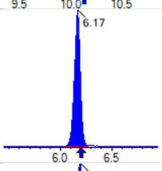
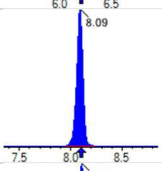
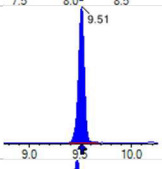
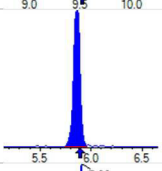
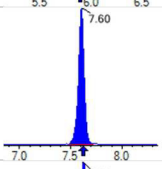
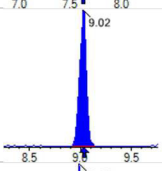
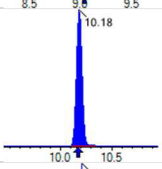
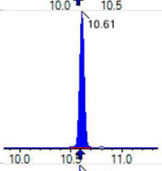
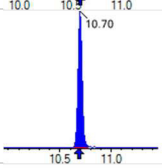
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 102562	(9.38 , N/A) (N/A , 0.03 , N/A)	371.1	N/A	0.7391 [1.0000]	73.9% { 78.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 248613	(8.09 , N/A) (N/A , 0.03 , N/A)	833.3	N/A	0.7703 [1.0000]	77.0% { 87.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 233000	(9.51 , N/A) (N/A , 0.02 , N/A)	387.6	N/A	0.9253 [1.0000]	92.5% { 91.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 639294	(3.74 , N/A) (N/A , 0.03 , N/A)	924.2	N/A	9.4891 [8.0000]	118.6% { 99.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 348897	(5.05 , N/A) (N/A , 0.02 , N/A)	823.7	N/A	4.2324 [4.0000]	105.8% { 106.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 289920	(6.20 , N/A) (N/A , 0.03 , N/A)	508.5	N/A	2.3110 [2.0000]	115.6% { 104.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 264059	(7.13 , N/A) (N/A , 0.03 , N/A)	873.1	N/A	2.4248 [2.0000]	121.2% { 113.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 268485	(7.95 , N/A) (N/A , 0.03 , N/A)	529.0	N/A	2.6469 [2.0000]	132.3% { 115.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 108613	(8.70 , N/A) (N/A , 0.04 , N/A)	446.0	N/A	1.2732 [1.0000]	127.3% { 105.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 114672	(9.37 , N/A) (N/A , 0.02 , N/A)	193.1	N/A	1.1658 [1.0000]	116.6% { 93.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 197381	(9.73 , N/A) (N/A , 0.00 , N/A)	352.8	N/A	1.4611 [1.0000]	146.1% { 113.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-o
Acquired: 2022/12/14 - 12:37

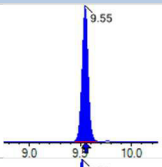
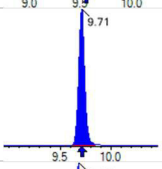
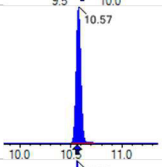
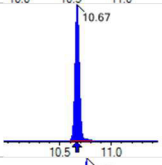
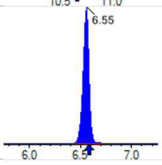
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 227410	(9.91 , N/A) (N/A , 0.00 , N/A)	538.0	N/A	1.3689 [1.0000]	136.9% { 108.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 119390	(10.13 , N/A) (N/A , 0.00 , N/A)	223.9	N/A	1.1445 [1.0000]	114.5% { 88.5% }			
13C3_PFBS_EIS	(302.0 / 80.0) 683404	(6.17 , N/A) (N/A , 0.02 , N/A)	779.9	N/A	2.3890 [2.0000]	119.5% { 100.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 400346	(8.09 , N/A) (N/A , 0.03 , N/A)	783.9	N/A	2.4868 [2.0000]	124.3% { 106.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 659513	(9.51 , N/A) (N/A , 0.02 , N/A)	390.3	N/A	2.2734 [2.0000]	113.7% { 110.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 79417	(5.86 , N/A) (N/A , 0.03 , N/A)	451.9	N/A	4.7501 [4.0000]	118.8% { 106.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 96865	(7.60 , N/A) (N/A , 0.03 , N/A)	531.7	N/A	4.7385 [4.0000]	118.5% { 96.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 88069	(9.02 , N/A) (N/A , 0.03 , N/A)	399.8	N/A	4.3182 [4.0000]	108.0% { 90.8% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 879146	(10.18 , N/A) (N/A , 0.01 , N/A)	719.1	N/A	2.0035 [2.0000]	100.2% { 99.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 120049	(10.61 , N/A) (N/A , 0.01 , N/A)	1012.1	N/A	1.0658 [2.0000]	53.3% { 51.3% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 102376	(10.70 , N/A) (N/A , 0.01 , N/A)	718.5	N/A	1.0476 [2.0000]	52.4% { 54.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0205-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-13
Path: S2022-12-14AS2022-12-14A10.wiff-o
Acquired: 2022/12/14 - 12:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 302196	(9.55 , N/A) (N/A , 0.02 , N/A)	540.5	N/A	4.4011 [4.0000]	110.0% { 119.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 304000	(9.71 , N/A) (N/A , 0.01 , N/A)	309.4	N/A	4.8930 [4.0000]	122.3% { 123.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 315506	(10.57 , N/A) (N/A , 0.01 , N/A)	1229.4	N/A	14.6110 [20.0000]	73.1% { 77.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 164340	(10.67 , N/A) (N/A , 0.01 , N/A)	1384.5	N/A	15.1884 [20.0000]	75.9% { 75.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 707433	(6.55 , N/A) (N/A , 0.03 , N/A)	921.5	N/A	9.2062 [8.0000]	115.1% { 106.5% }			

PREPARATION BATCH SUMMARY

EPA 1633

Laboratory:	APPL, LLC			Work Order:	22L0071
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Batch:	BBL0205	Batch Matrix:	Water	Preparation:	1633

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT g	FINAL VOL. ml
AF-RHMW06-WGN01B-2212W1	22L0071-01	12/12/22 14:19	500.00	2.00
AF-RHMW06-WGN01B-2212W1	22L0071-01RE1	12/12/22 14:19	500.00	2.00
AF-RHMW06-WQEB01-2212W1	22L0071-02	12/12/22 14:19	500.00	2.00
AF-RHMW06-WQEB01-2212W1	22L0071-02RE1	12/12/22 14:19	500.00	2.00
AF-RHMW04-WGN01LF-2212W1	22L0071-03	12/12/22 14:19	500.00	2.00
AF-RHMW04-WGN01LF-2212W1	22L0071-03RE1	12/12/22 14:19	500.00	2.00
Blank	BBL0205-BLK1	12/09/22 14:19	500.00	2.00
LCS	BBL0205-BS1	12/09/22 14:19	500.00	2.00
MRL Check	BBL0205-MRL1	12/09/22 14:19	500.00	2.00

PREPARATION BENCH SHEET
Organics

BBL0205

Print Date/Time: 12/14/2022 2:39 pm

Matrix: Water

Prepared using: PFAS - 1633

Analyses
1633

Spiking Solution(s)
22K0039 PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)
22L0117 MPFAC-HIF-ES 20.0ng/mL

Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (g)	Final (ml)	ul Spike	ul Surrogate	Extraction Comments
22L0057-02	ADIT6-DU03-WQFB01-22DEC	12/12/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0057-02RE1	ADIT6-DU03-WQFB01-22DEC	12/12/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0057-03	AF-RHMW17-WGN01LF-2212W1	12/12/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0057-03RE1	AF-RHMW17-WGN01LF-2212W1	12/12/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0059-20	120620	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-20RE1	120620	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0059-21	120621	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-21RE1	120621	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0059-22	120623	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-22RE1	120623	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0059-23	120722	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-23RE1	120722	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0059-24	120724	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-24RE1	120724	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0059-25	120725	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-25RE1	120725	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	Added 12/14/2022 by DAG
22L0071-01	AF-RHMW06-WGN01B-2212W1	12/13/2022	01/05/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0071-01RE1	AF-RHMW06-WGN01B-2212W1	12/13/2022	01/05/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0071-02	AF-RHMW06-WQEB01-2212W1	12/13/2022	01/05/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0071-02RE1	AF-RHMW06-WQEB01-2212W1	12/13/2022	01/05/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0071-03	AF-RHMW04-WGN01LF-2212W1	12/13/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0071-03RE1	AF-RHMW04-WGN01LF-2212W1	12/13/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"

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

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PREPARATION BENCH SHEET
Organics

Print Date/Time: 12/14/2022 2:39 pm

BBL0205

(Continued)

Matrix: Water

Prepared using: PFAS - 1633

Analyses
1633

Spiking Solution(s)
22K0039 PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)
22L0117 MPFAC-HIF-ES 20.0ng/mL

22L0078-01	AF-RHMW12A-WGN01B-2212W1	12/14/2022	01/06/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0078-01RE1	AF-RHMW12A-WGN01B-2212W1	12/14/2022	01/06/2023	12/9/2022 2:19:00PM	500	2		200	"Report relevant surrogates"
22L0078-02	AF-RHMW10-WGN01B-2212W1	12/14/2022	01/08/2023	12/9/2022 2:19:00PM	500	2		200	possibly x2 EIS
22L0078-02RE1	AF-RHMW10-WGN01B-2212W1	12/14/2022	01/08/2023	12/9/2022 2:19:00PM	500	2		200	possibly x2 EIS
22L0078-03	AF-RHMW16-WGN01B-2212W1	12/14/2022	01/07/2023	12/9/2022 2:19:00PM	500	2		200	possibly x2 EIS
22L0078-03RE1	AF-RHMW16-WGN01B-2212W1	12/14/2022	01/07/2023	12/9/2022 2:19:00PM	500	2		200	possibly x2 EIS
BBL0205-BLK1	Blank			12/9/2022 2:19:00PM	500	2	0	200	
BBL0205-BS1	LCS			12/9/2022 2:19:00PM	500	2	200	200	
BBL0205-MRL1	MRL Check			12/9/2022 2:19:00PM	500	2	20	200	

Reagents

Standard	Description	LotNum

Start Date/Time _____

StopDate/Time _____

Batch Comments:
Spiked by:
Balance #: WB2
Concentration:
Cartridge:

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

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PREPARATION BENCH SHEET
Organics

BBL0205

Print Date/Time: 12/09/2022 2:25 pm

Matrix: Water

Prepared using: PFAS - 1633

Analyses
1633

Spiking Solution(s)

Surrogate Solution(s)
22L0117 MPFAC-HIF-ES 20.0ng/mL

Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (g)	Final (ml)	ul Spike	ul Surrogate	Extraction Comments
22L0057-02	ADIT6-DU03-WQFB01-22DEC	12/15/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0057-03	AF-RHMW17-WGN01LF-2212W1	12/15/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-20	120620	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-21	120621	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-22	120623	12/21/2022	01/03/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-23	120722	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-24	120724	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
22L0059-25	120725	12/21/2022	01/04/2023	12/9/2022 2:19:00PM	500	2		200	
BBL0205-BLK1	Blank			12/9/2022 2:19:00PM	500	2		200	
BBL0205-BS1	LCS			12/9/2022 2:19:00PM	500	2		200	
BBL0205-MRL1	MRL Check			12/9/2022 2:19:00PM	500	2		200	

tart Date/Time _____

topDate/Time _____

Reagents

Standard	Description	LotNum

piking 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
Sequence:	SB03823	Instrument:	Saphira
Calibration:	2251013		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SB03823-CAL1	S2022-12-13A (1)	12/13/22 20:03
Cal Standard	SB03823-CAL2	S2022-12-13A (2)	12/13/22 20:16
Cal Standard	SB03823-CAL3	S2022-12-13A (3)	12/13/22 20:29
Cal Standard	SB03823-CAL4	S2022-12-13A (4)	12/13/22 20:41
Cal Standard	SB03823-CAL5	S2022-12-13A (5)	12/13/22 20:54
Cal Standard	SB03823-CAL6	S2022-12-13A (6)	12/13/22 21:07
Cal Standard	SB03823-CAL7	S2022-12-13A (7)	12/13/22 21:19
Cal Standard	SB03823-CAL8	S2022-12-13A (8)	12/13/22 21:32
Initial Cal Blank	SB03823-ICB1	S2022-12-13A (9)	12/13/22 21:45
Secondary Cal Check	SB03823-SCV1	S2022-12-13A (10)	12/13/22 21:58

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Sequence:	SB03835	Instrument:	Saphira
Calibration:	2251013		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SB03835-CCB1	S2022-12-14A (1)	12/14/22 10:56
Low Cal Check	SB03835-LCV1	S2022-12-14A (2)	12/14/22 11:08
Calibration Check	SB03835-CCV1	S2022-12-14A (3)	12/14/22 11:21
Calibration Blank	SB03835-CCB2	S2022-12-14A (4)	12/14/22 11:59
Blank	BBL0205-BLK1	S2022-12-14A (5)	12/14/22 12:12
LCS	BBL0205-BS1	S2022-12-14A (6)	12/14/22 12:25
MRL Check	BBL0205-MRL1	S2022-12-14A (7)	12/14/22 12:37
AF-RHMW06-WGN01B-2212W1	22L0071-01	S2022-12-14A (12)	12/14/22 13:41
AF-RHMW06-WGN01B-2212W1	22L0071-01RE1	S2022-12-14A (13)	12/14/22 13:53
AF-RHMW06-WQEB01-2212W1	22L0071-02	S2022-12-14A (14)	12/14/22 14:06
AF-RHMW06-WQEB01-2212W1	22L0071-02RE1	S2022-12-14A (15)	12/14/22 14:19
AF-RHMW04-WGN01LF-2212W1	22L0071-03	S2022-12-14A (16)	12/14/22 14:32
AF-RHMW04-WGN01LF-2212W1	22L0071-03RE1	S2022-12-14A (17)	12/14/22 14:44
Calibration Check	SB03835-CCV2	S2022-12-14A (24)	12/14/22 16:13
Calibration Blank	SB03835-CCB3	S2022-12-14A (25)	12/14/22 16:26
Calibration Check	SB03835-CCV3	S2022-12-14A (38)	12/14/22 19:11
Calibration Blank	SB03835-CCB4	S2022-12-14A (39)	12/14/22 19:24
Calibration Check	SB03835-CCV4	S2022-12-14A (53)	12/14/22 22:22
Calibration Blank	SB03835-CCB5	S2022-12-14A (54)	12/14/22 22:34

WELLINGTON LABORATORIES

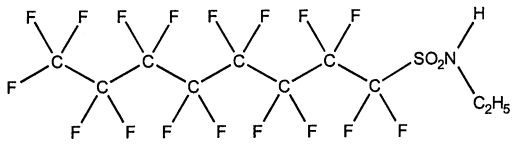
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

LOT NUMBER: NEtFOSA0821M

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA: $C_{10}H_6F_{17}NO_2S$
CONCENTRATION: 50.0 ± 2.5 µg/mL
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

MOLECULAR WEIGHT: 527.20
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/16/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

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

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 ±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:

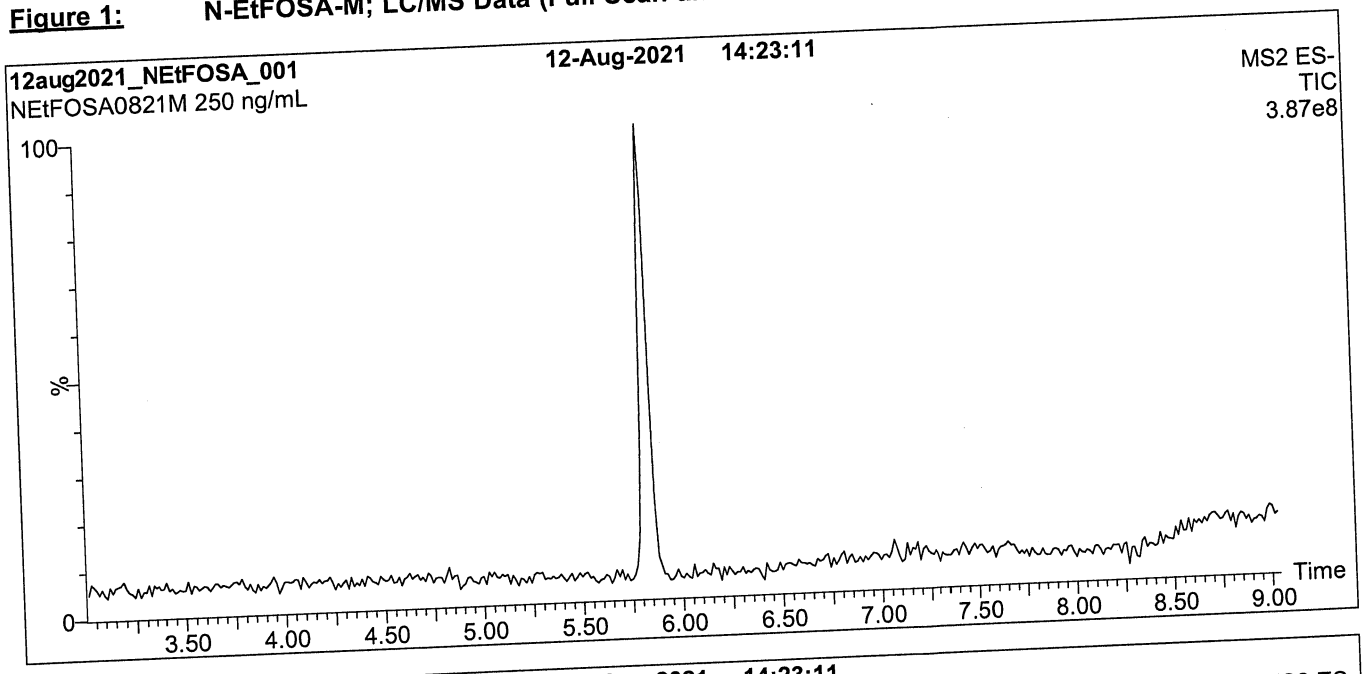
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

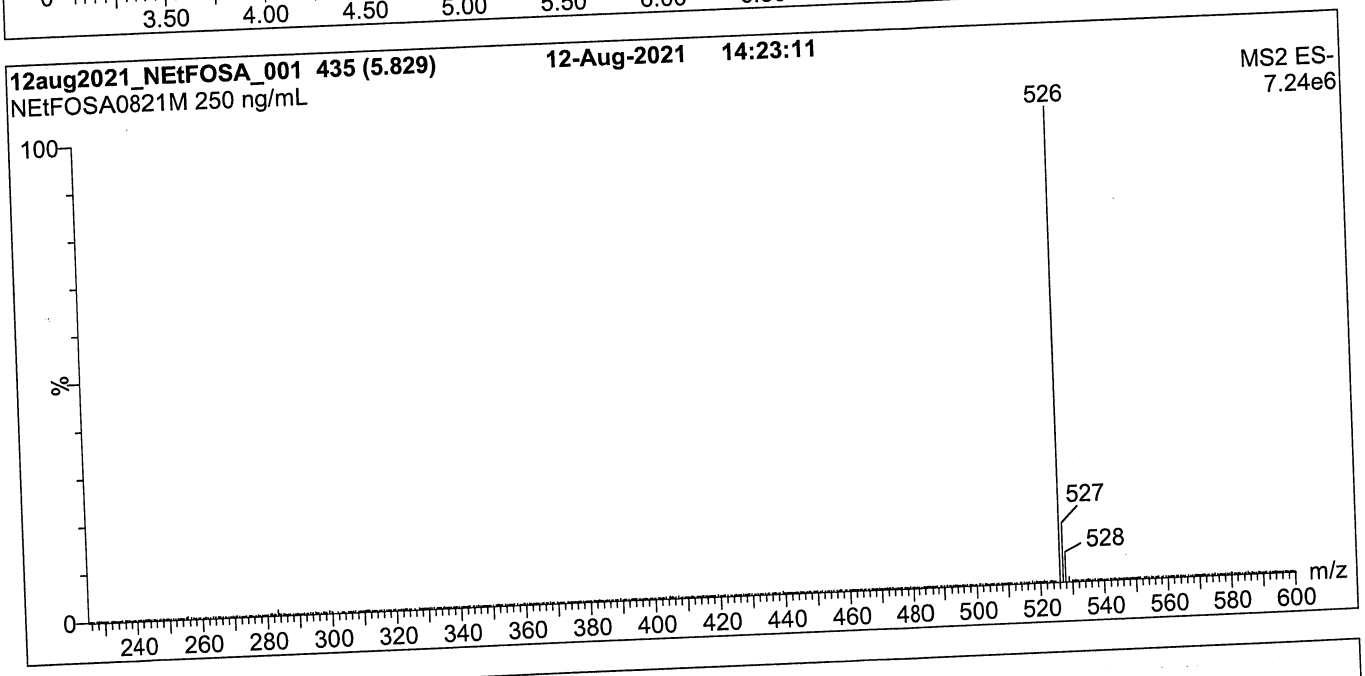
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

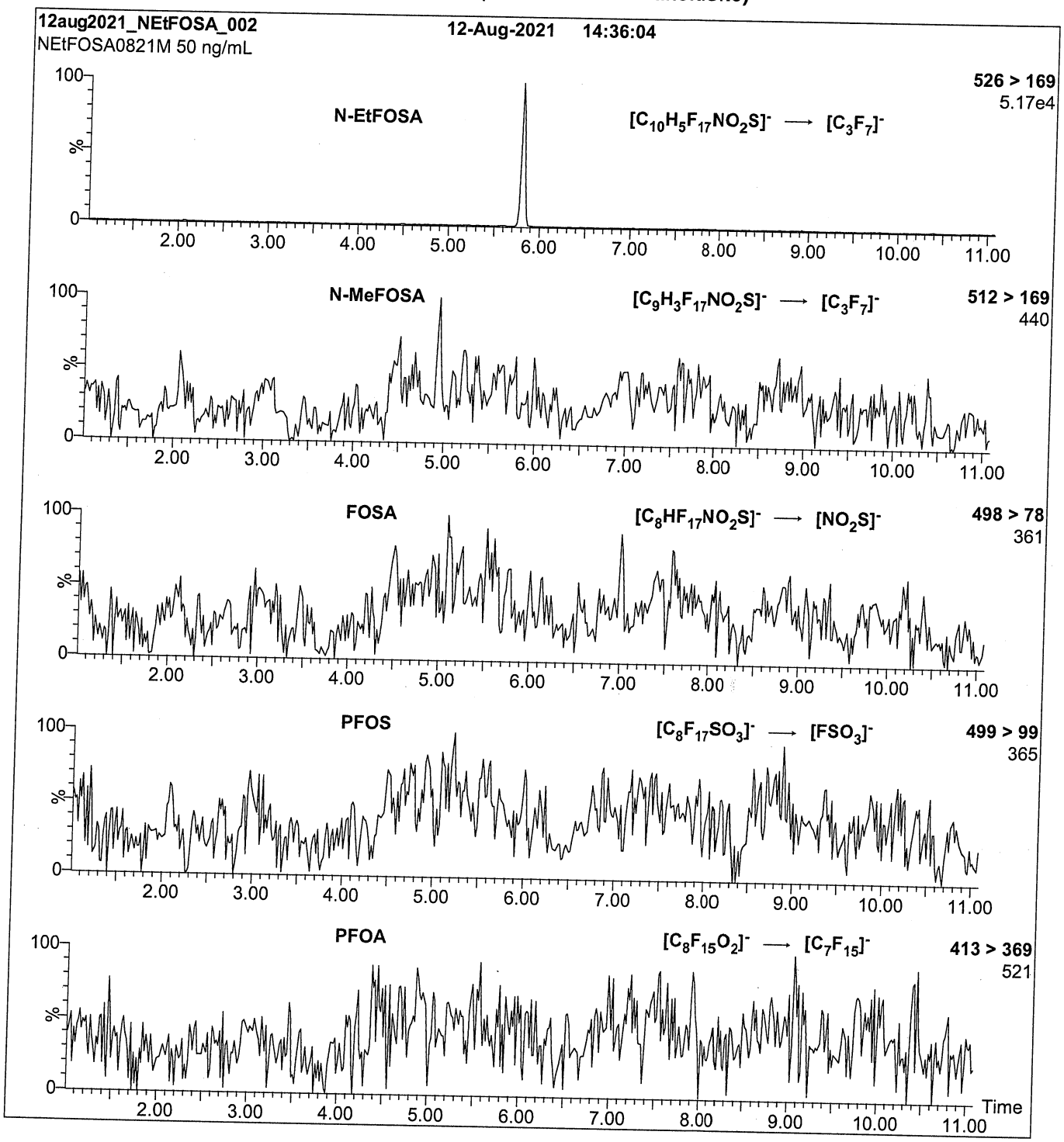
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

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



Conditions for Figure 2:

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

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

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

Analytical Standard Record

21J0007

Description:	PFAS - SAS N-EtFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Analyte Spike	Prepared:	08/12/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NEtFOSA0821M)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:05 by HGH

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

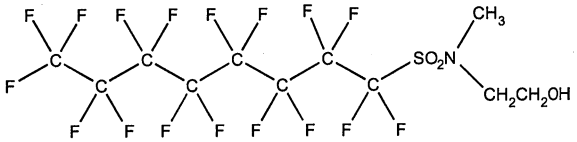
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M

COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

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



MOLECULAR FORMULA: $C_{11}H_8F_{17}NO_3S$ **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: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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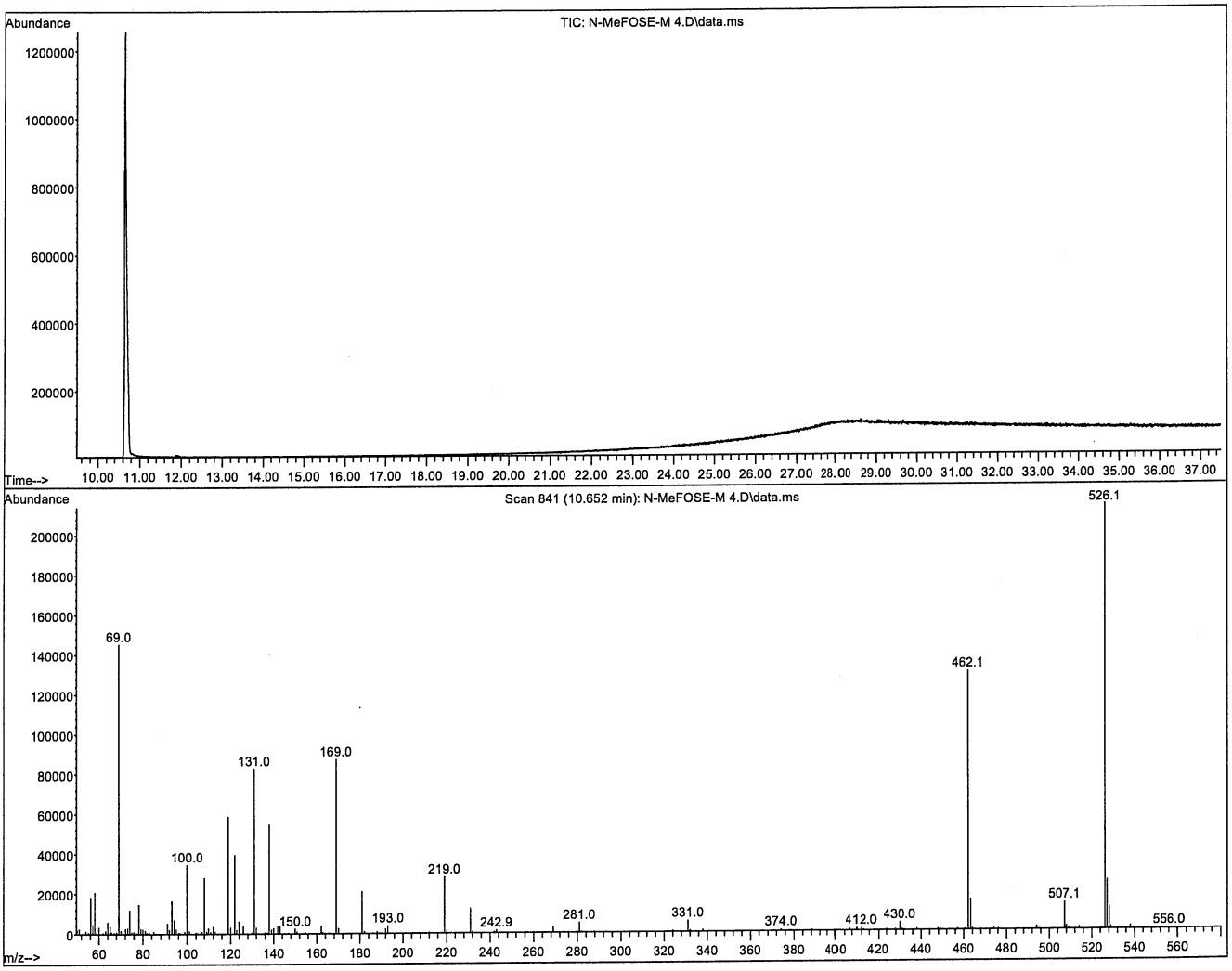
Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



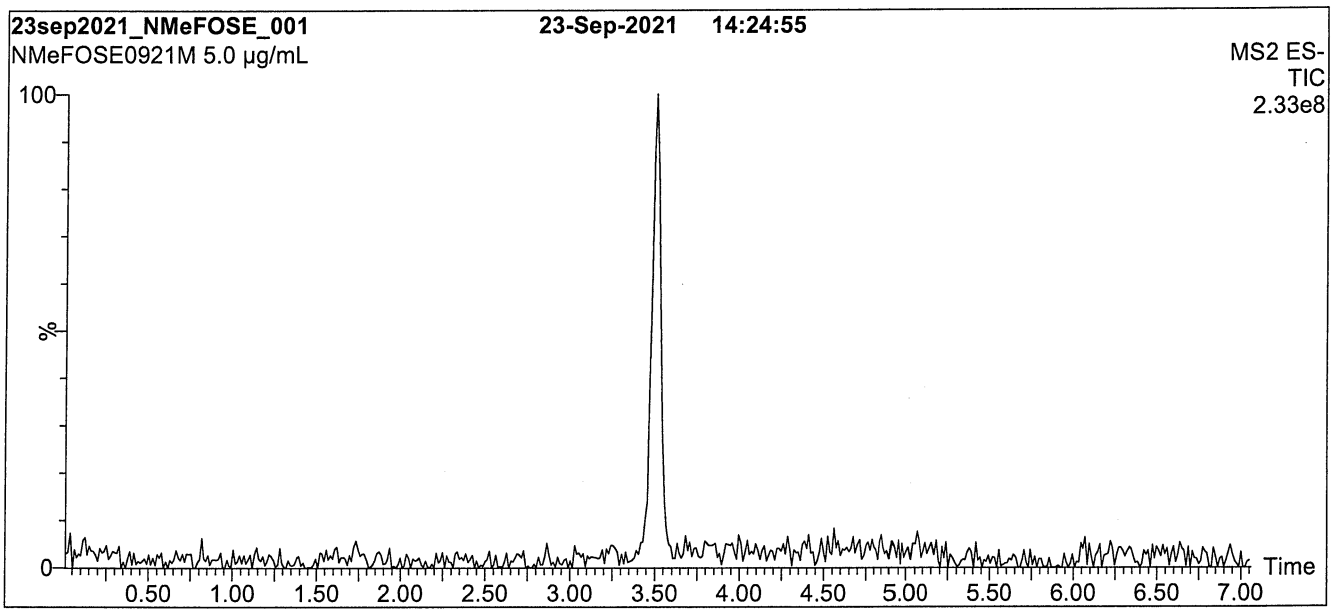
Conditions for Figure 1:

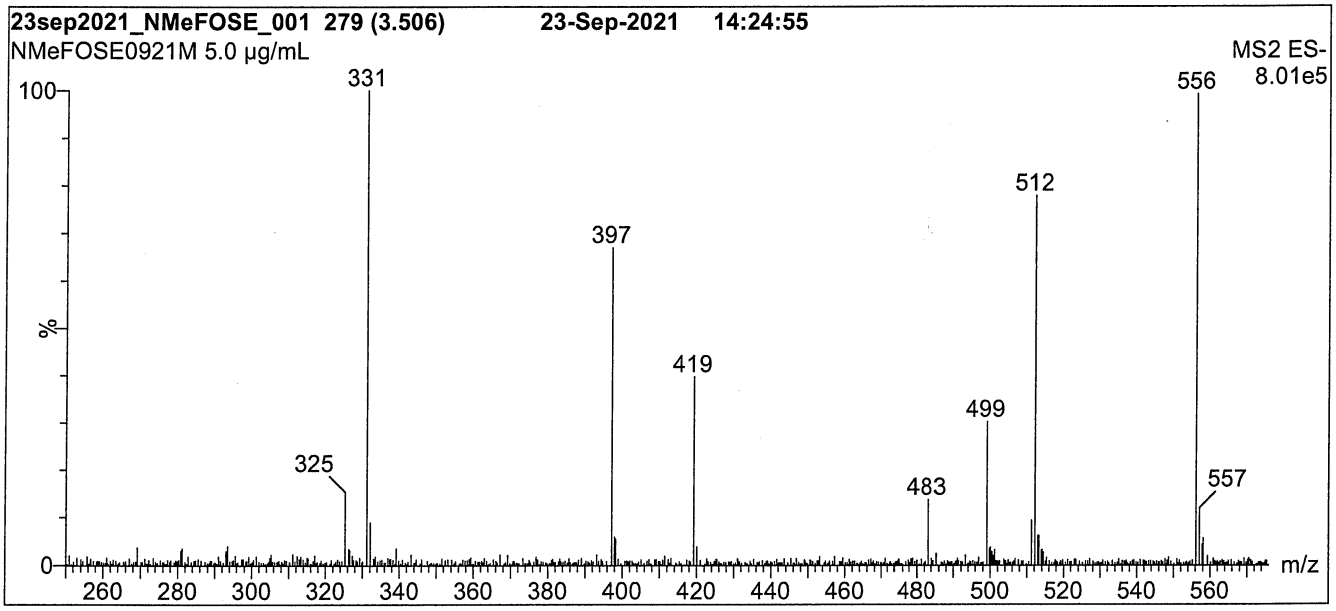
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 310°C 310°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 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

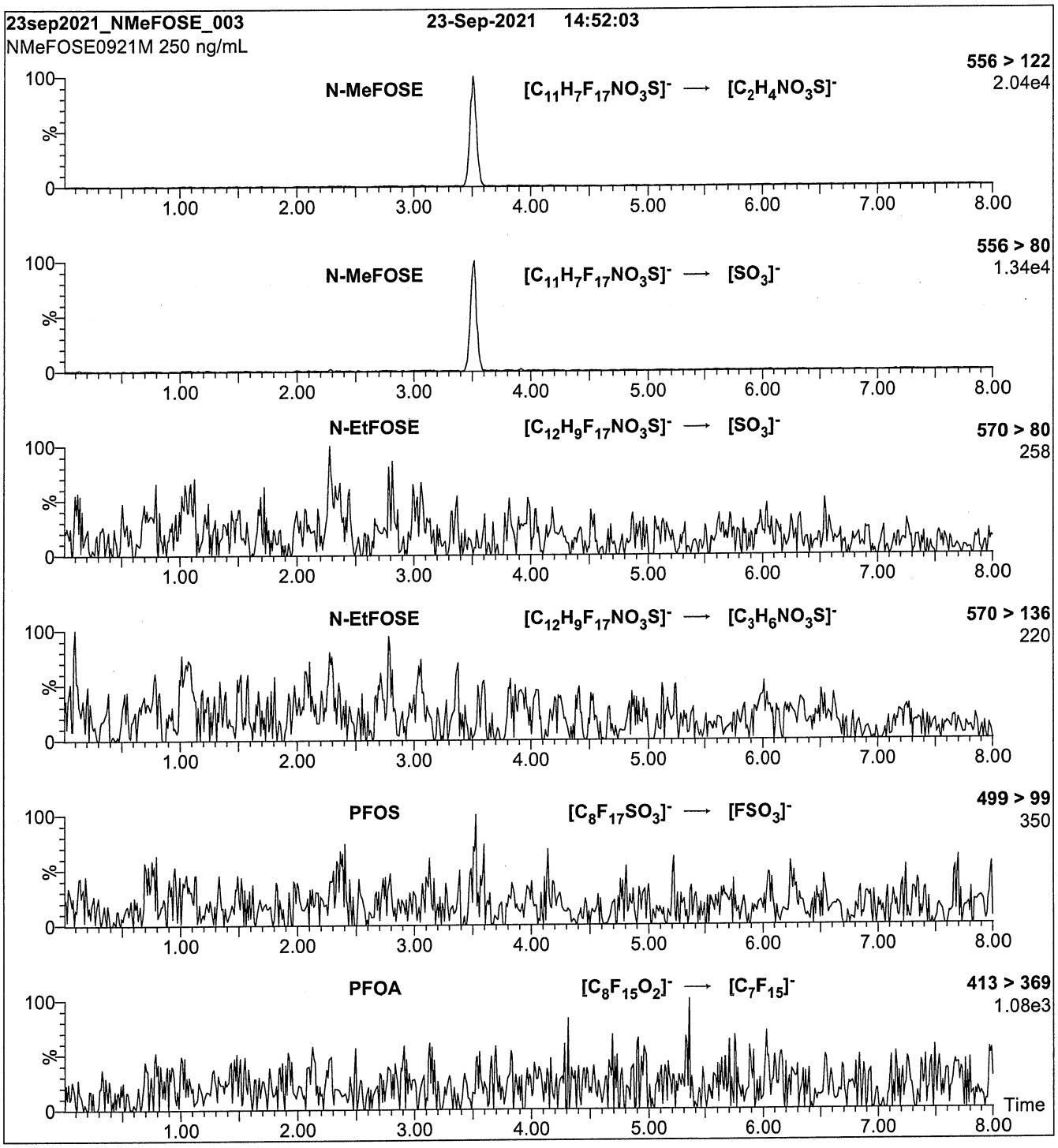
Flow: 300 µL/min

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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 36

Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

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

Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

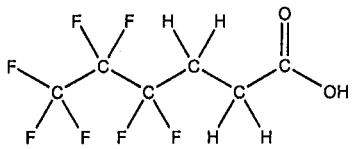
Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA
LOT NUMBER: FPrPA1020
COMPOUND: 3-Perfluoropropyl propanoic acid

STRUCTURE:
CAS #: 356-02-5



MOLECULAR FORMULA: $C_6H_5F_7O_2$
MOLECULAR WEIGHT: 242.09
CONCENTRATION: 50.0 ± 2.5 µg/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 ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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 ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17034 REFERENCE MATERIAL PRODUCER

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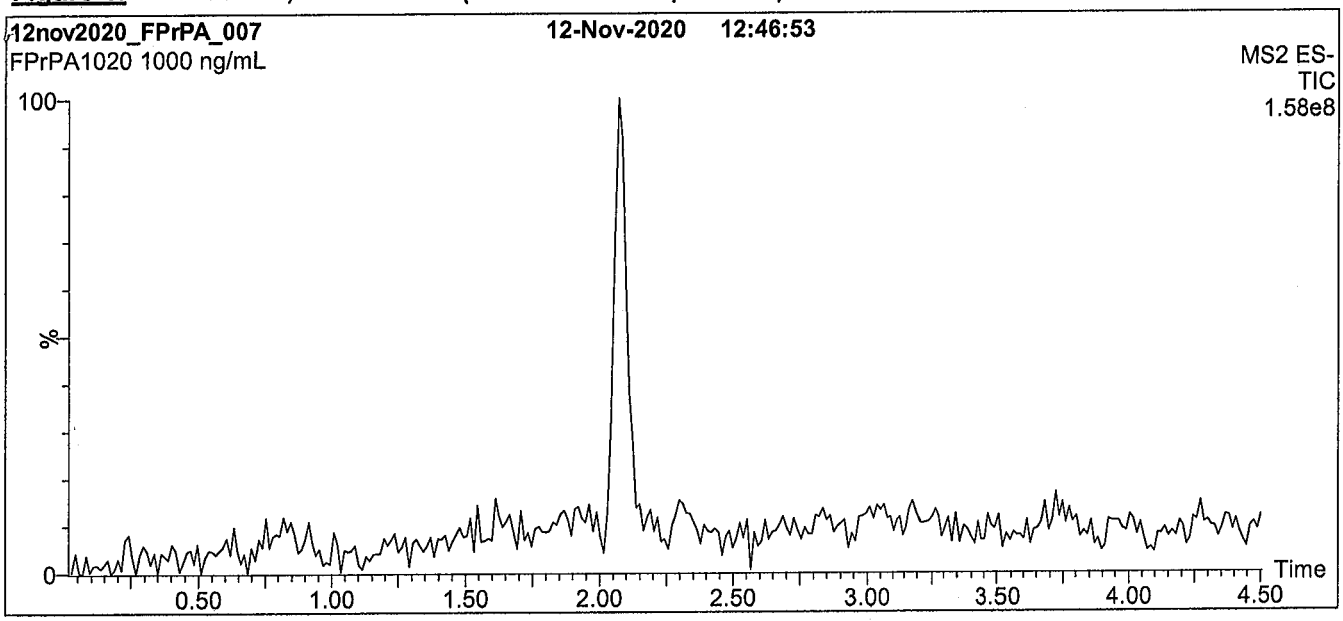
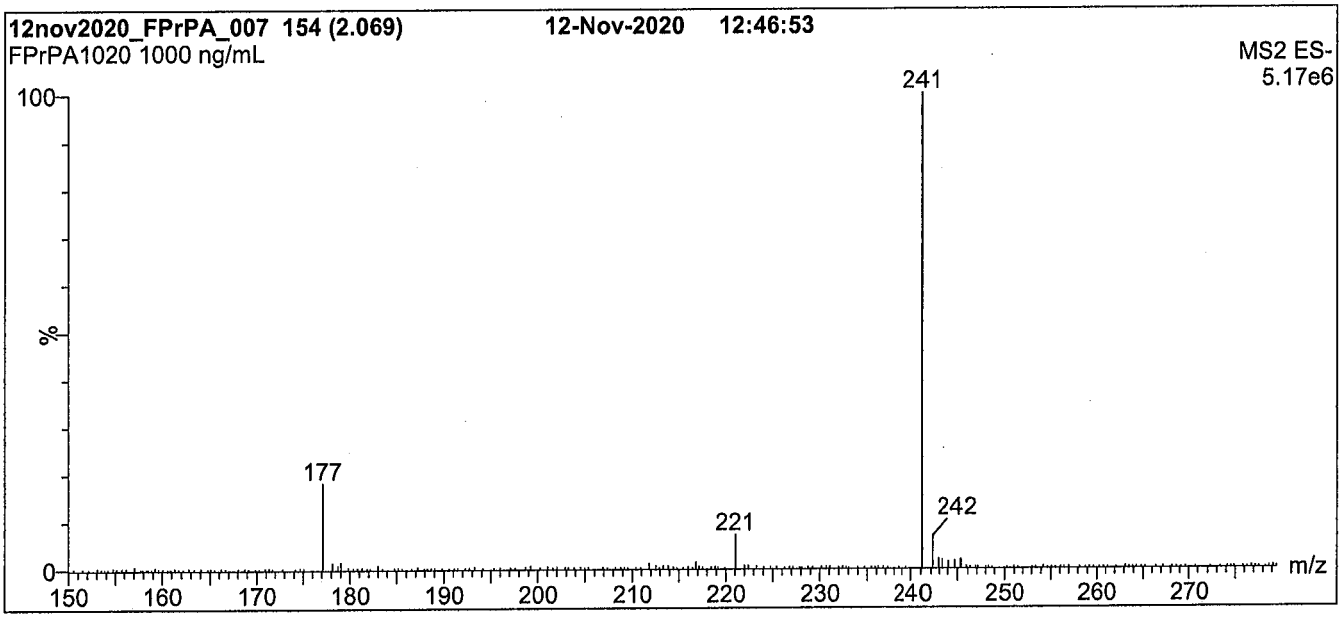
Figure 1: **FPrPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

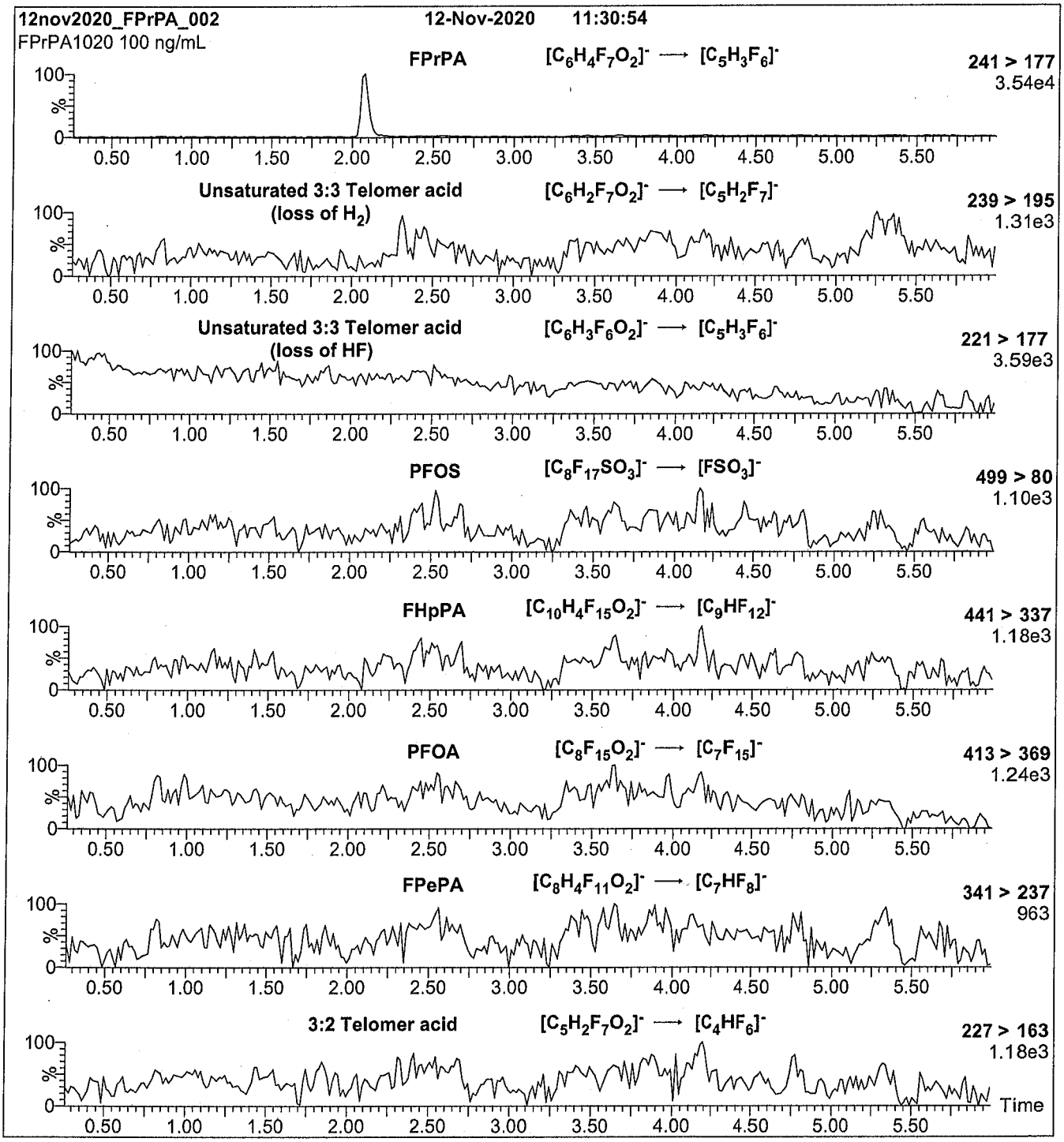
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 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: **FPrPA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

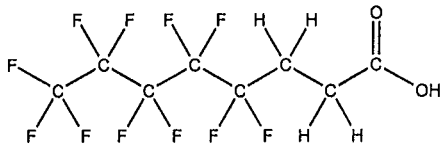
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER

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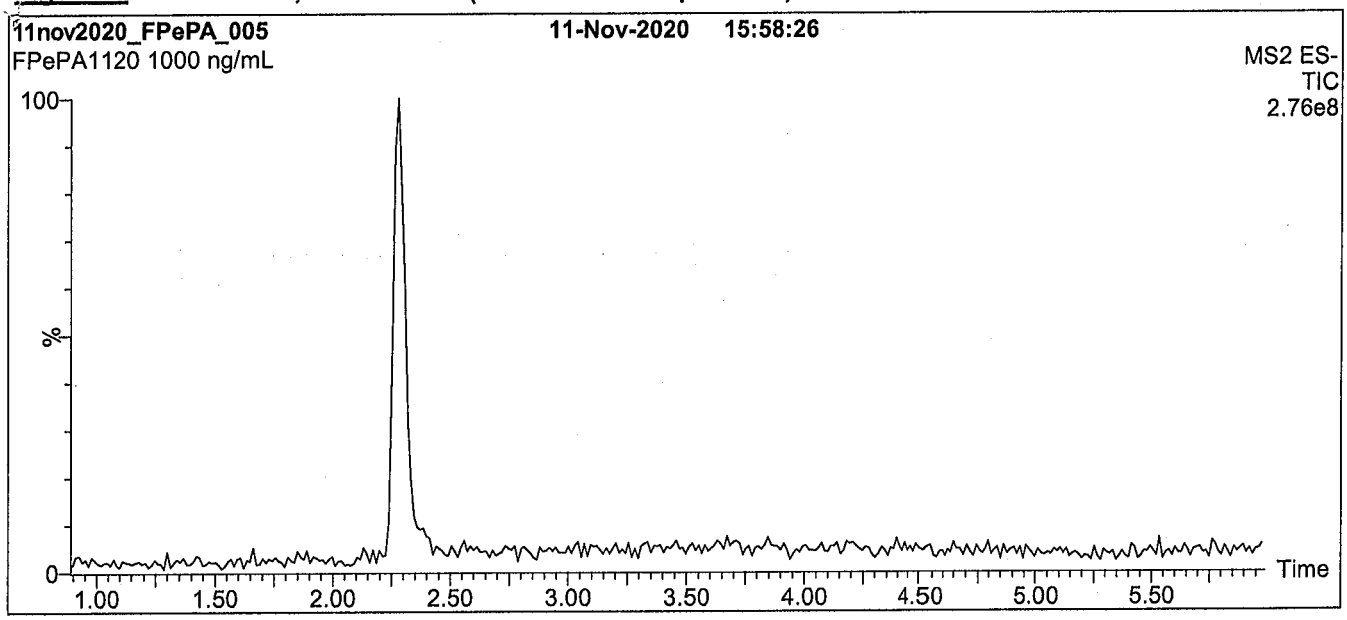
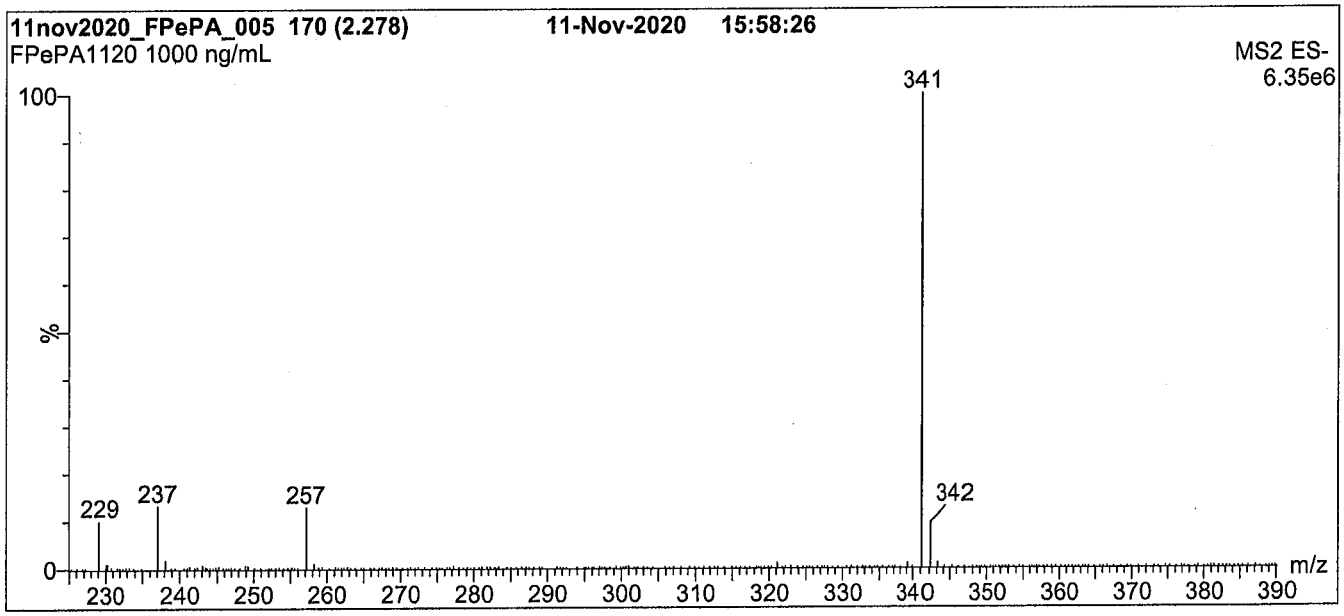
Figure 1: **FPePA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

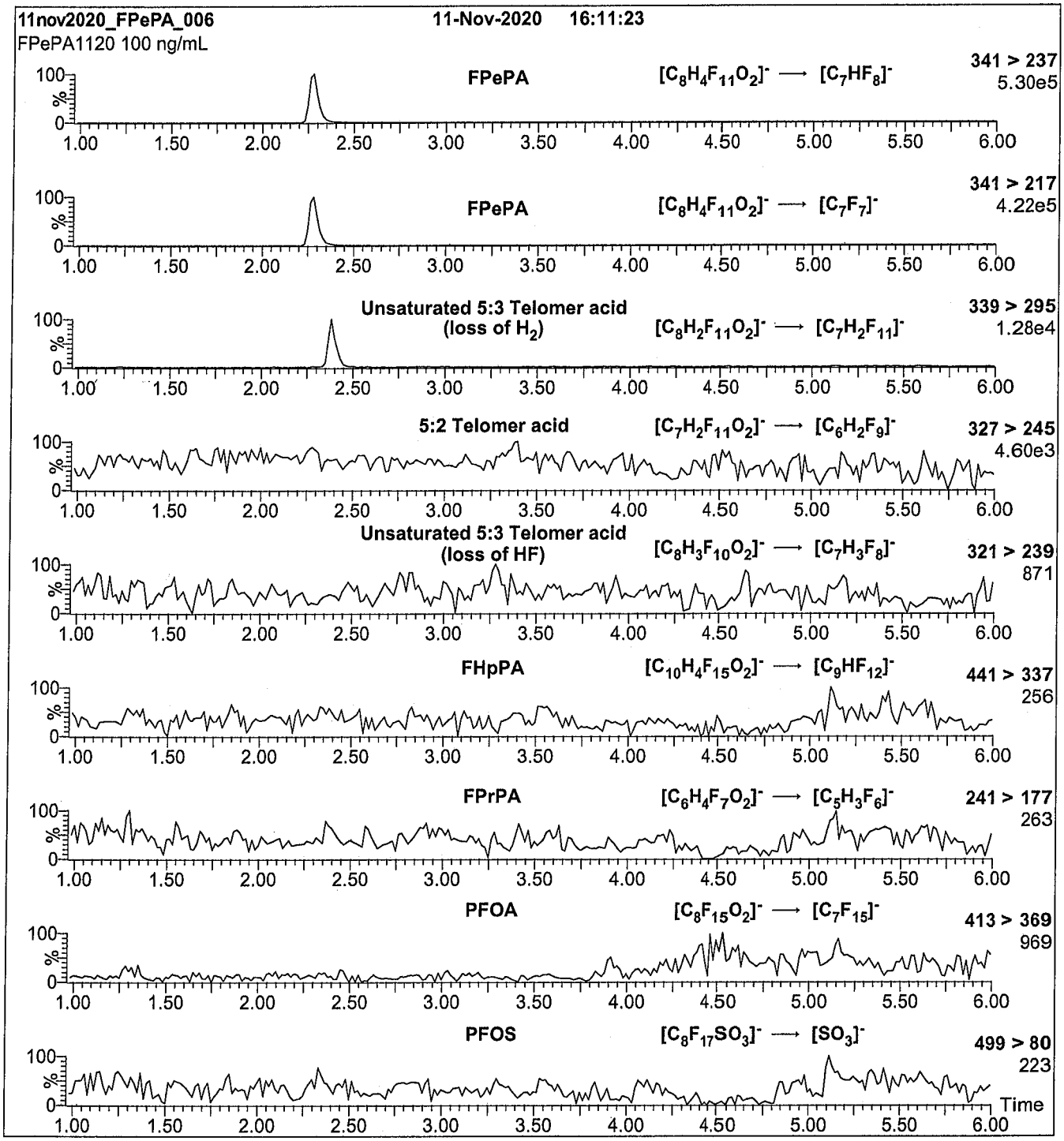
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 10

Analytical Standard Record

21L0005

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

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

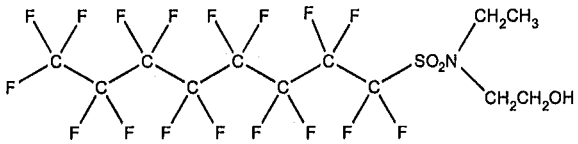
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M

COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

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



MOLECULAR FORMULA: $C_{12}H_{10}F_{17}NO_3S$ **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: _____ **Date:** 10/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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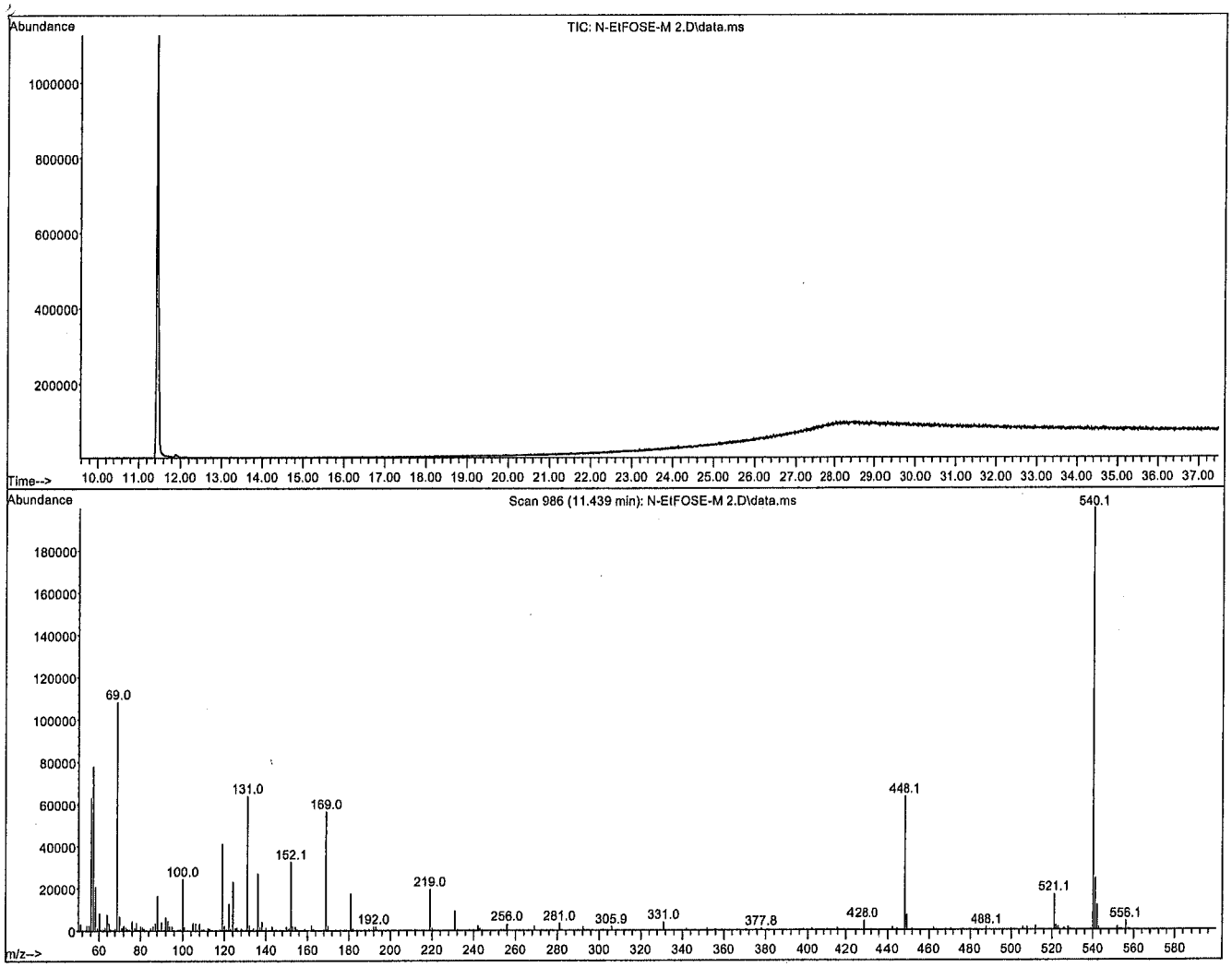
Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



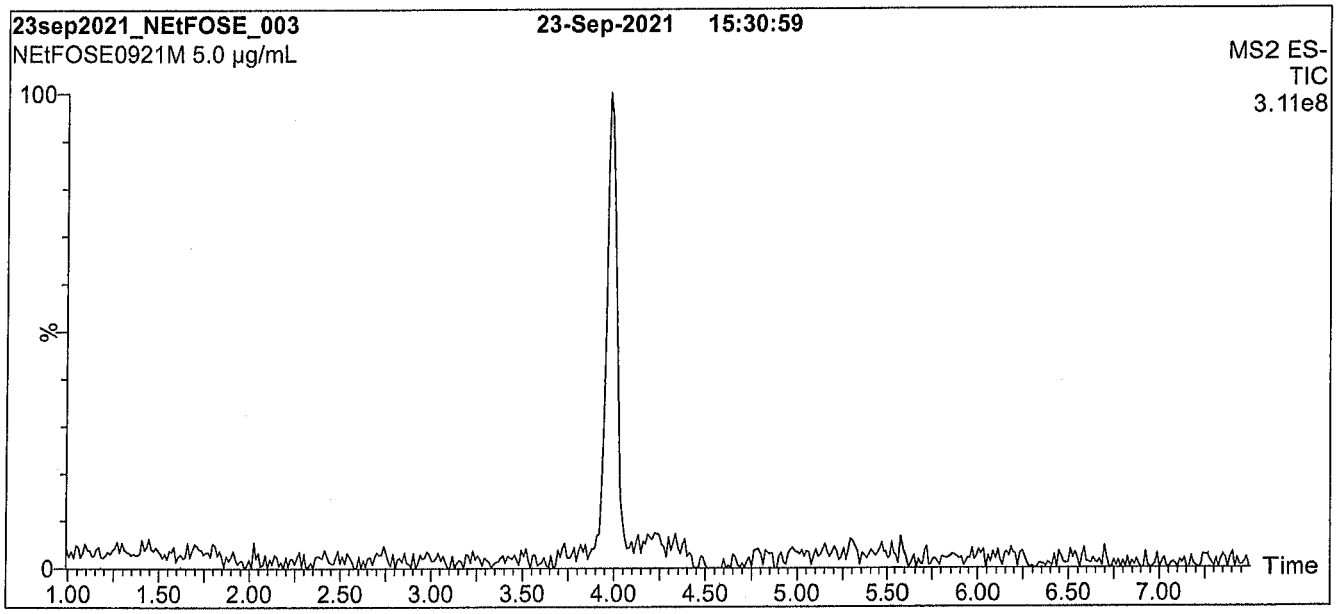
Conditions for Figure 1:

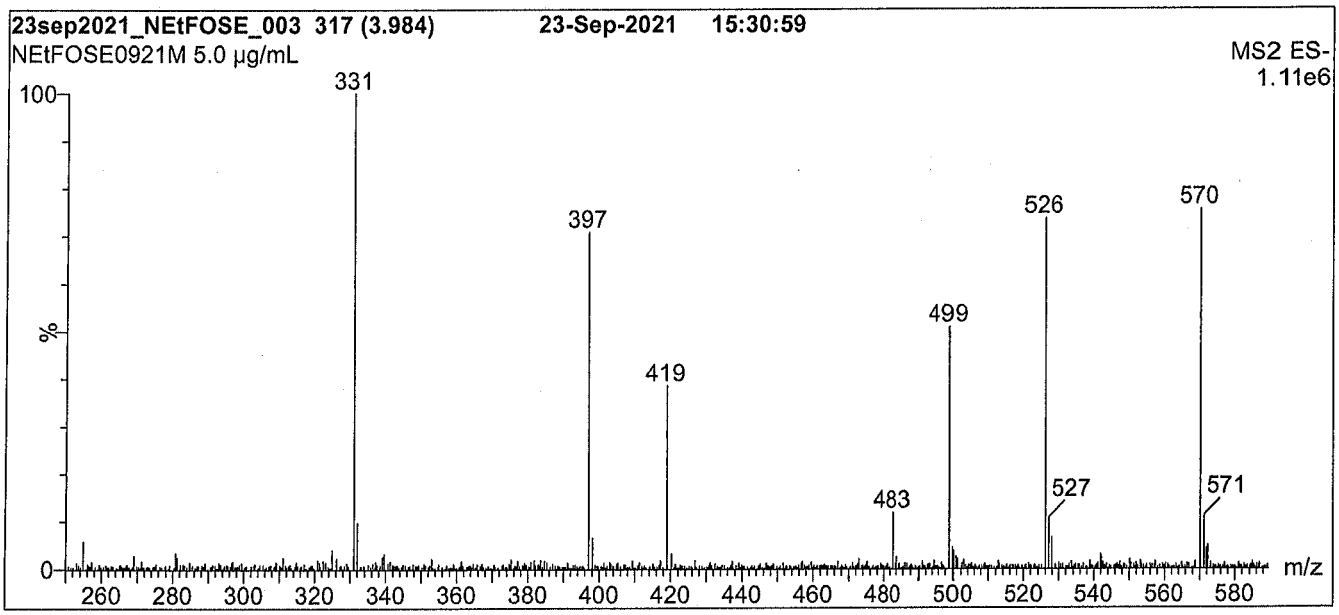
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 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

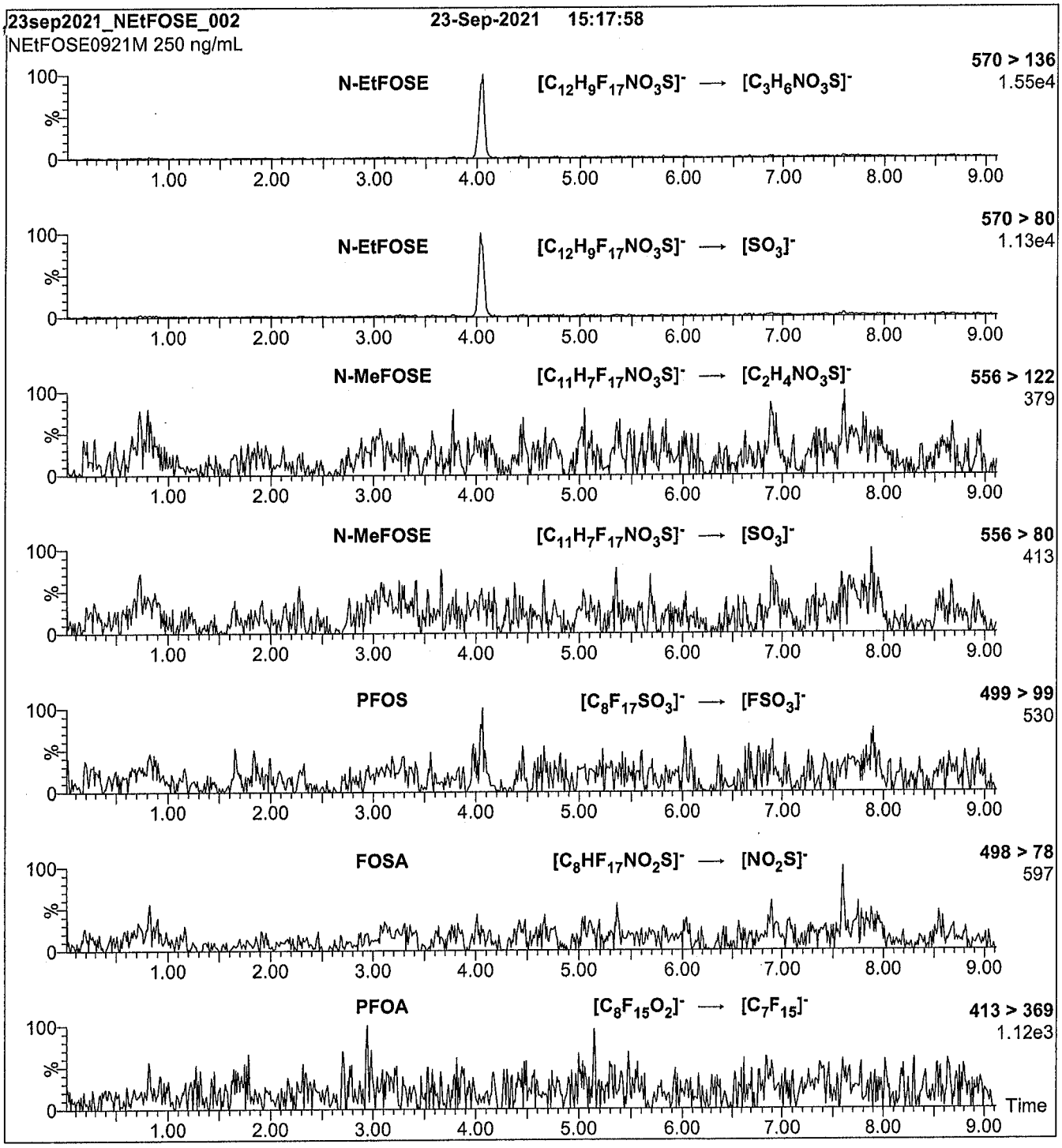
Flow: 300 µL/min

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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 32

Analytical Standard Record

21L0006

Description:	PFAS - SAS EtFOSE 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 17:22 by HGH
Comments:	5:3 FTCA 50.0ug/mL		

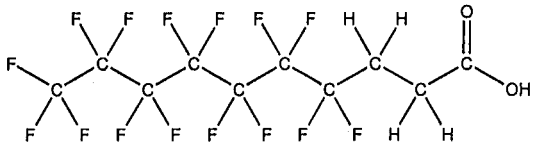
Analyte	Parent	CAS Number	Concentration	Units
N-ETFOSE		1691-99-2	50	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

STRUCTURE:
CAS #: 812-70-4



MOLECULAR FORMULA: $C_{10}H_5F_{15}O_2$
MOLECULAR WEIGHT: 442.12
CONCENTRATION: 50.0 ± 2.5 µg/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
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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

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

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 ±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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CALA Testing Accreditation No. A1226

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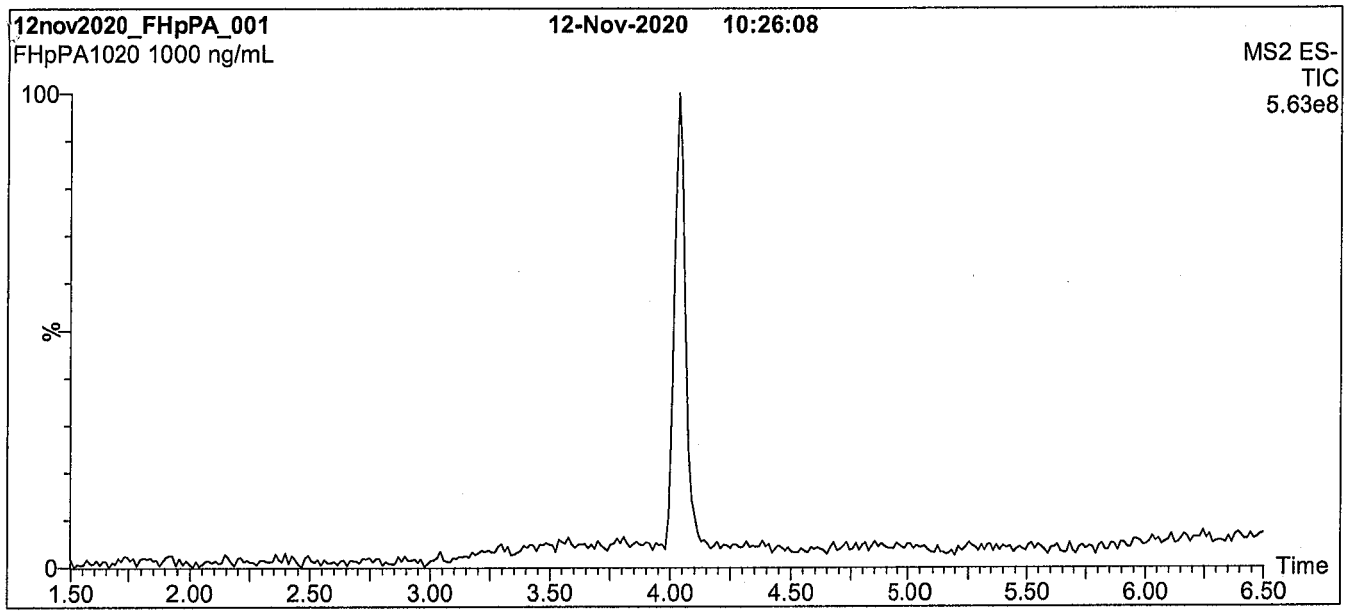
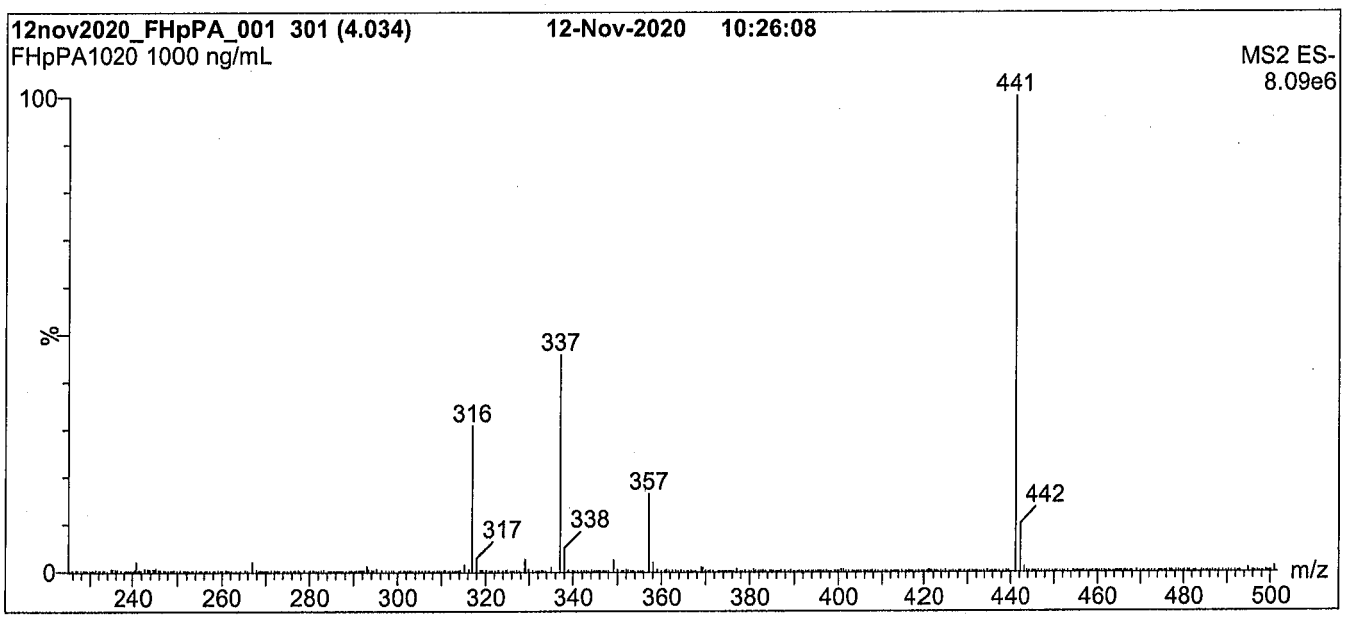
Figure 1: **FHpPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

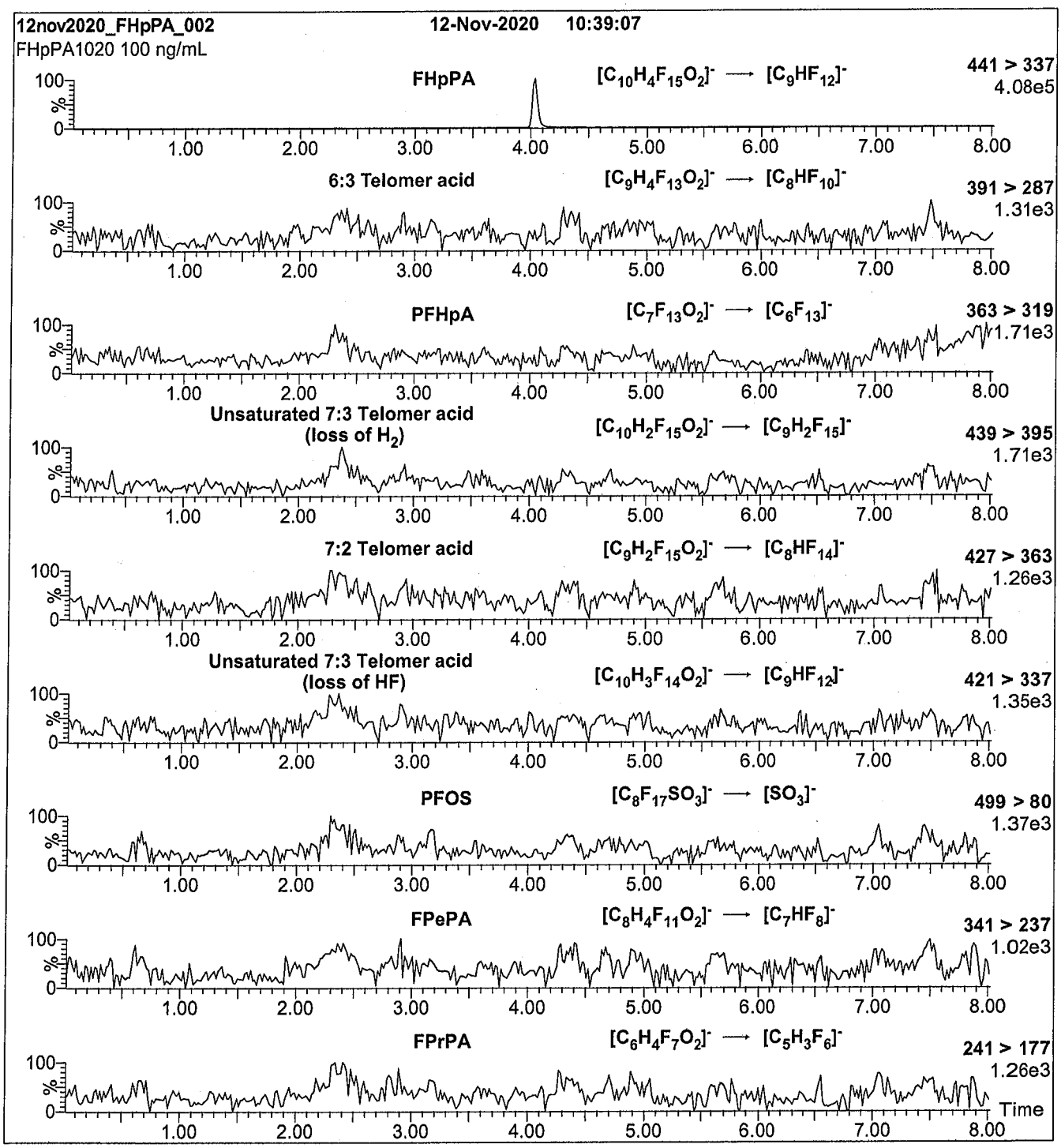
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 8

Analytical Standard Record

21L0007

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

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

WELLINGTON LABORATORIES

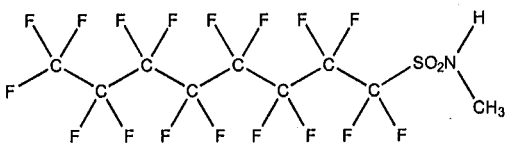
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



MOLECULAR FORMULA: $C_9H_4F_{17}NO_2S$
CONCENTRATION: 50.0 ± 2.5 µg/mL
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

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

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: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17034 REFERENCE MATERIAL PRODUCER

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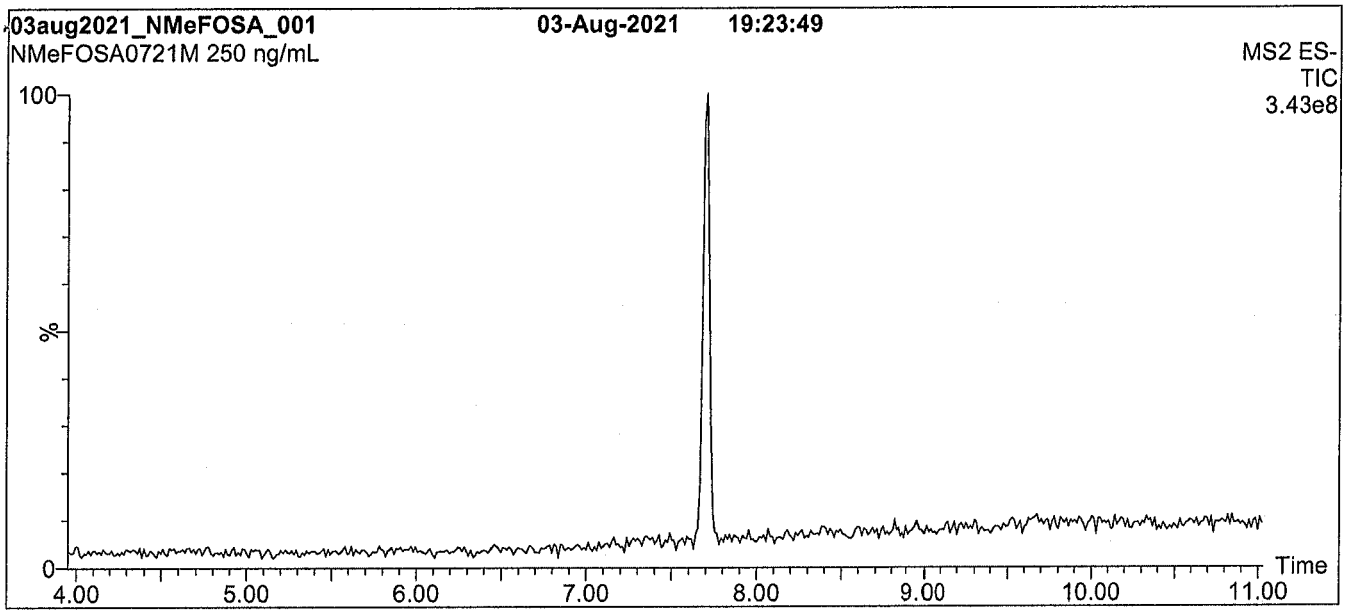
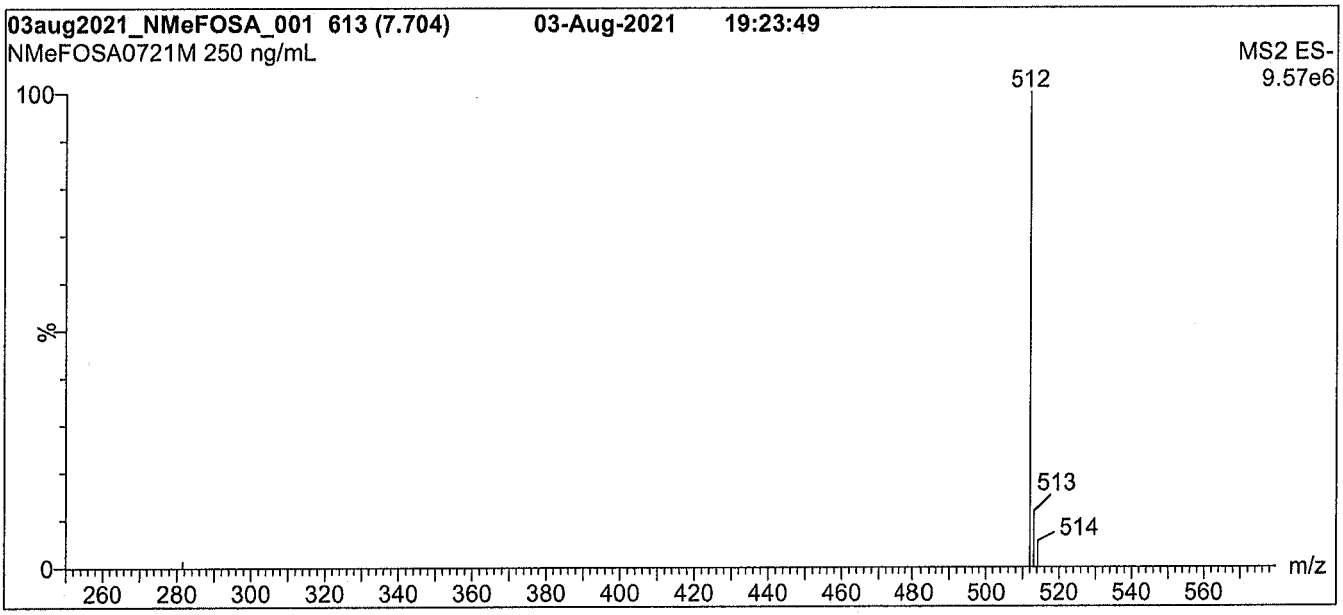
Figure 1: **N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

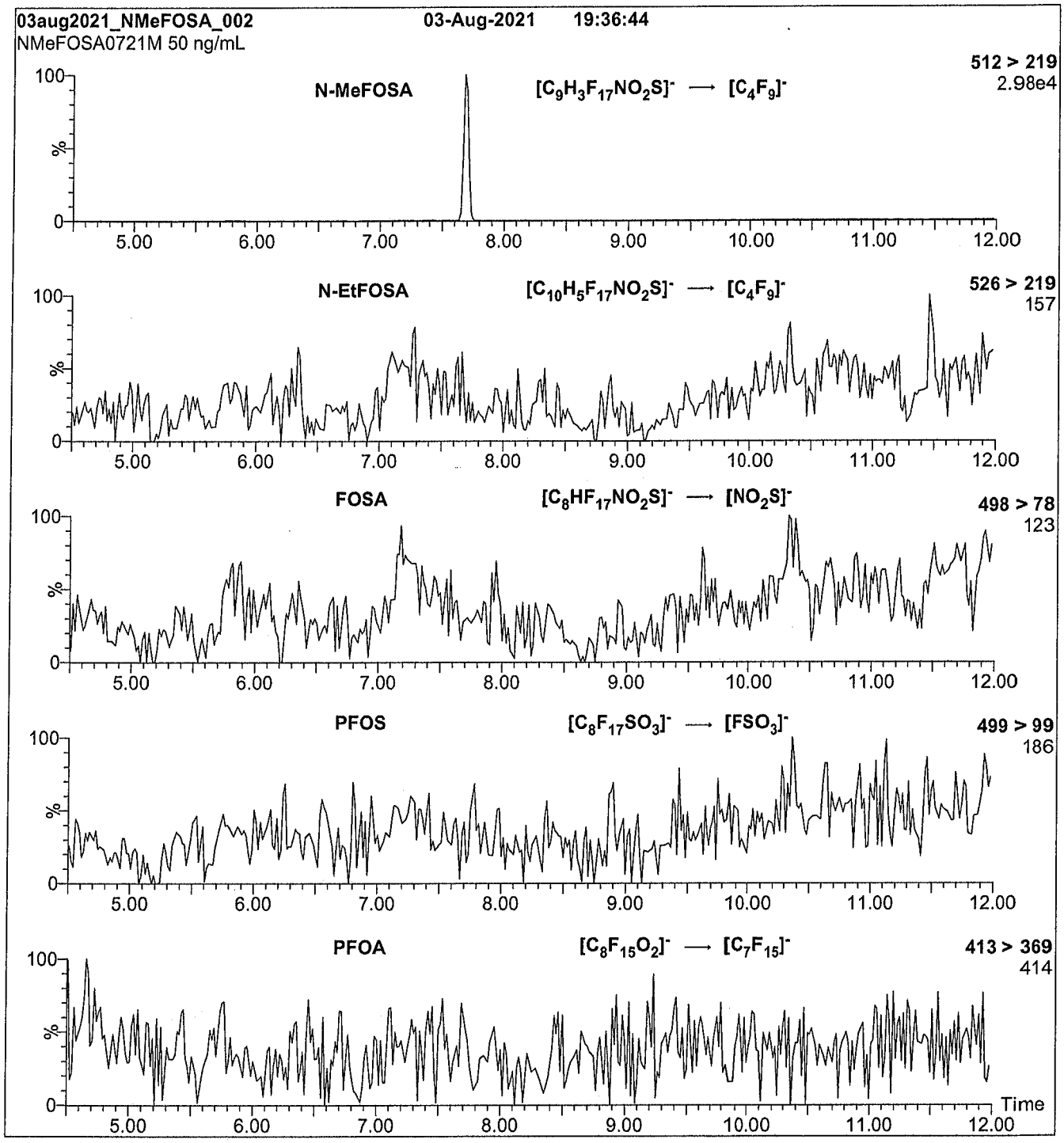
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 24

Analytical Standard Record

21L0008

Description:	PFAS - SAS N-MeFOSA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:18 by HGH

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

WELLINGTON LABORATORIES

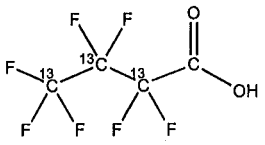
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBA
COMPOUND: Perfluoro-n-(2,3,4-$^{13}C_3$)butanoic acid

LOT NUMBER: M3PFBA0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_3{}^{12}CHF_7O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 217.02
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
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

ISOTOPIC PURITY: ≥99% ^{13}C (2,3,4-$^{13}C_3$)

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-($^{13}C_3$)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-$^{13}C_4$)butanoic acid due to the naturally occurring isotopic abundance of ^{13}C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager

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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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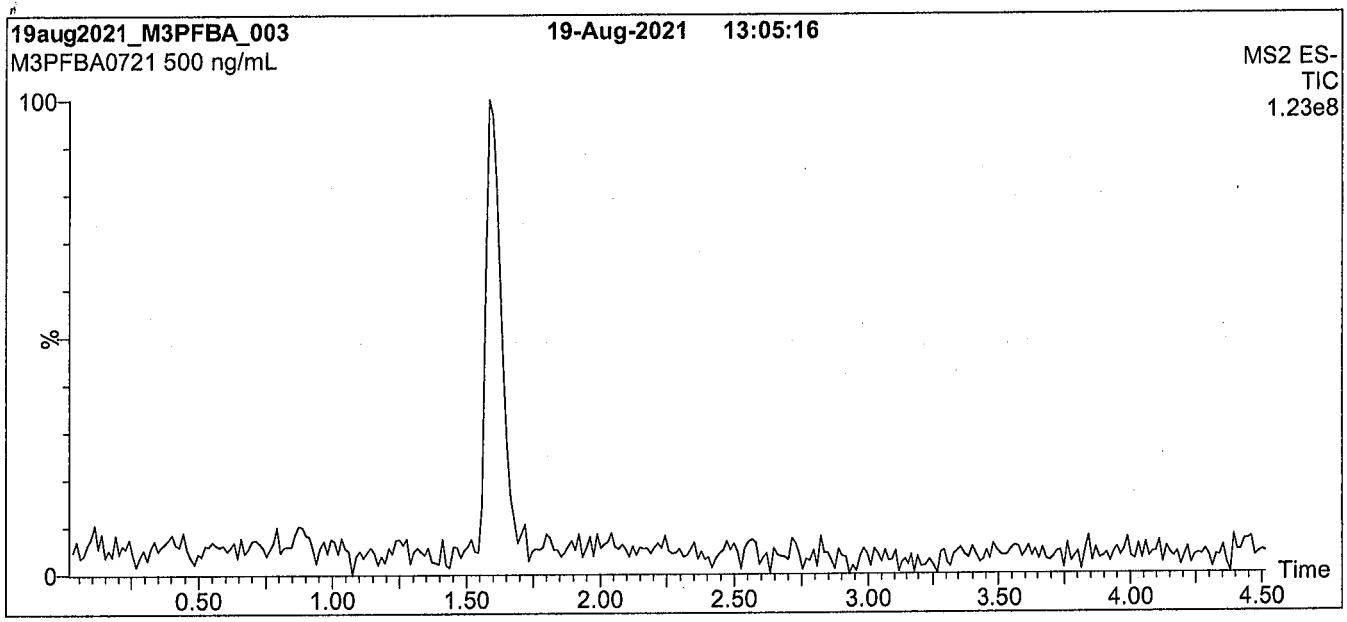
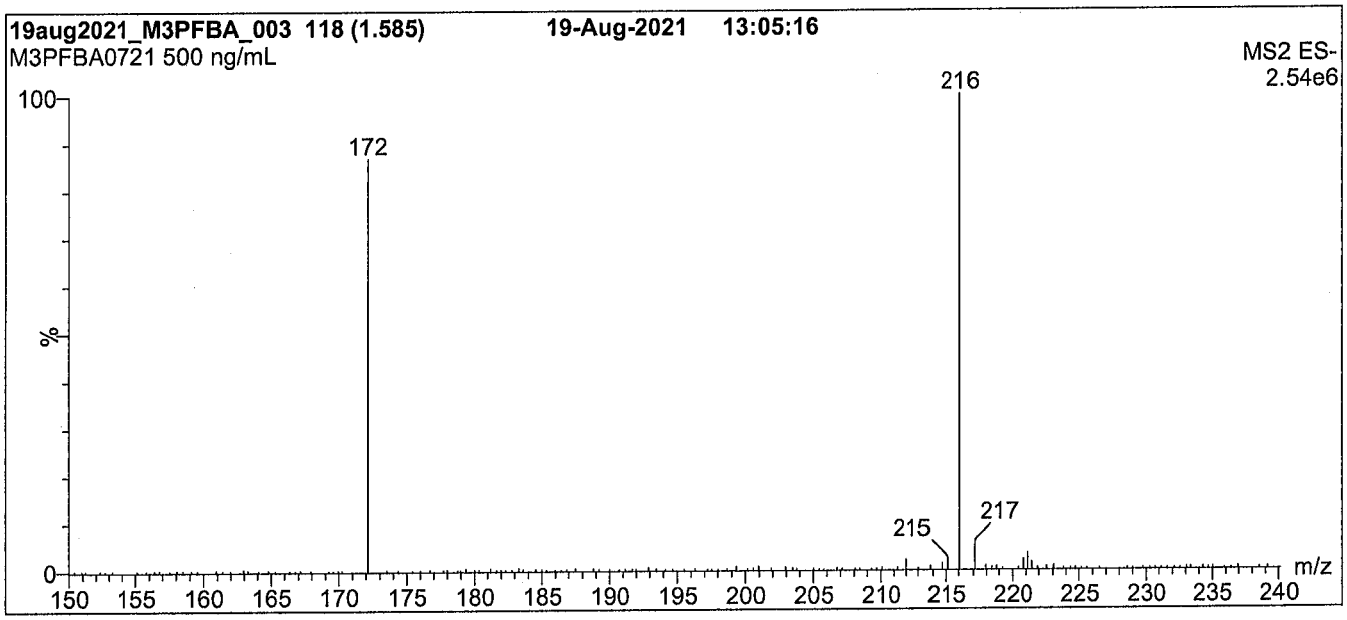
Figure 1: **M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

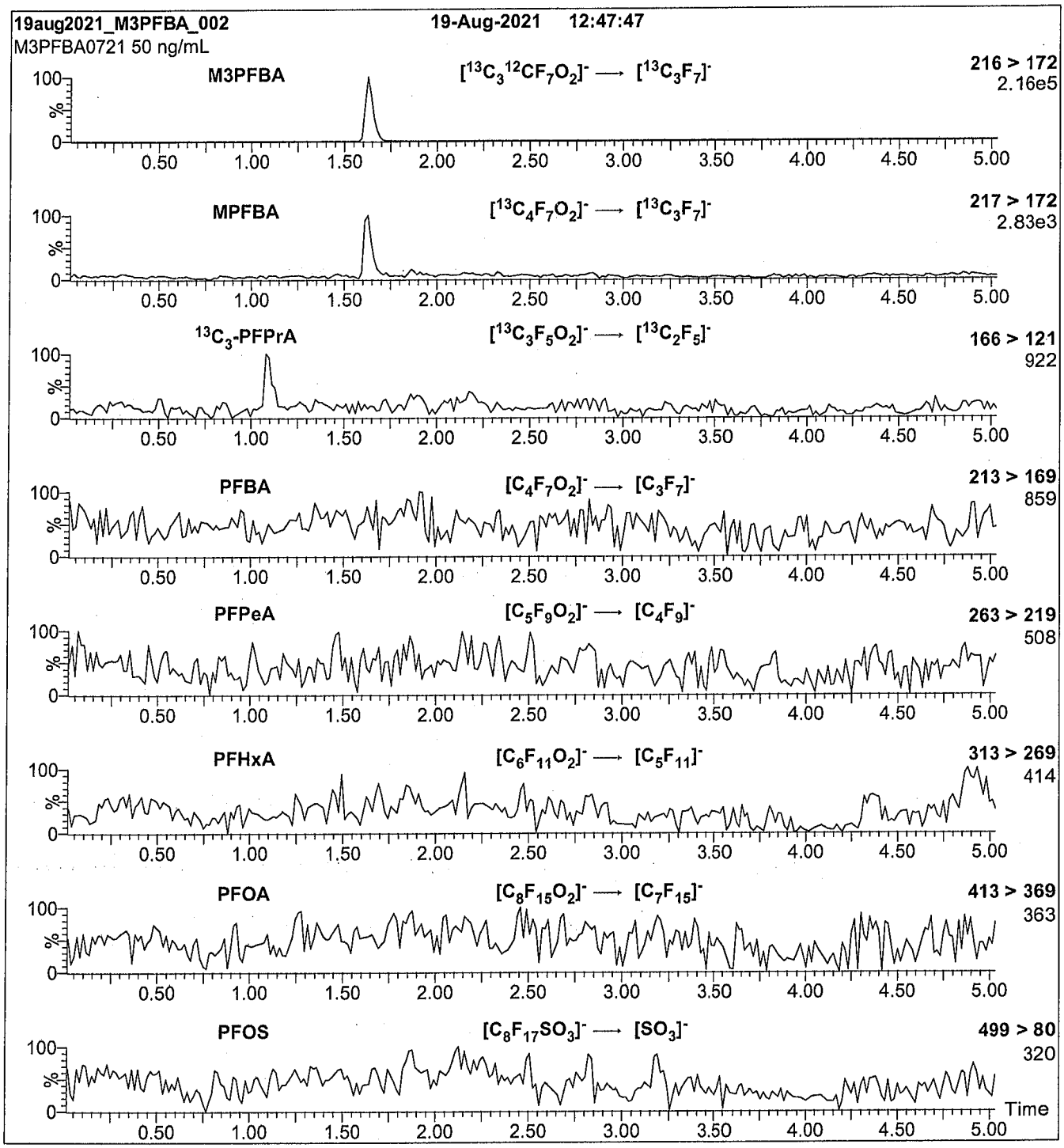
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 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: **M3PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFBA)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

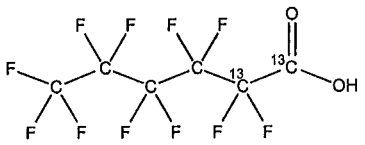
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-(1,2-$^{13}C_2$)hexanoic acid

LOT NUMBER: MPFHxA0921

STRUCTURE:

CAS #: 960315-47-3



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_4HF_{11}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 316.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
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

ISOTOPIC PURITY: ≥99% ^{13}C (1,2-$^{13}C_2$)

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

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

INTENDED USE:

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.

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17034 REFERENCE MATERIAL PRODUCER

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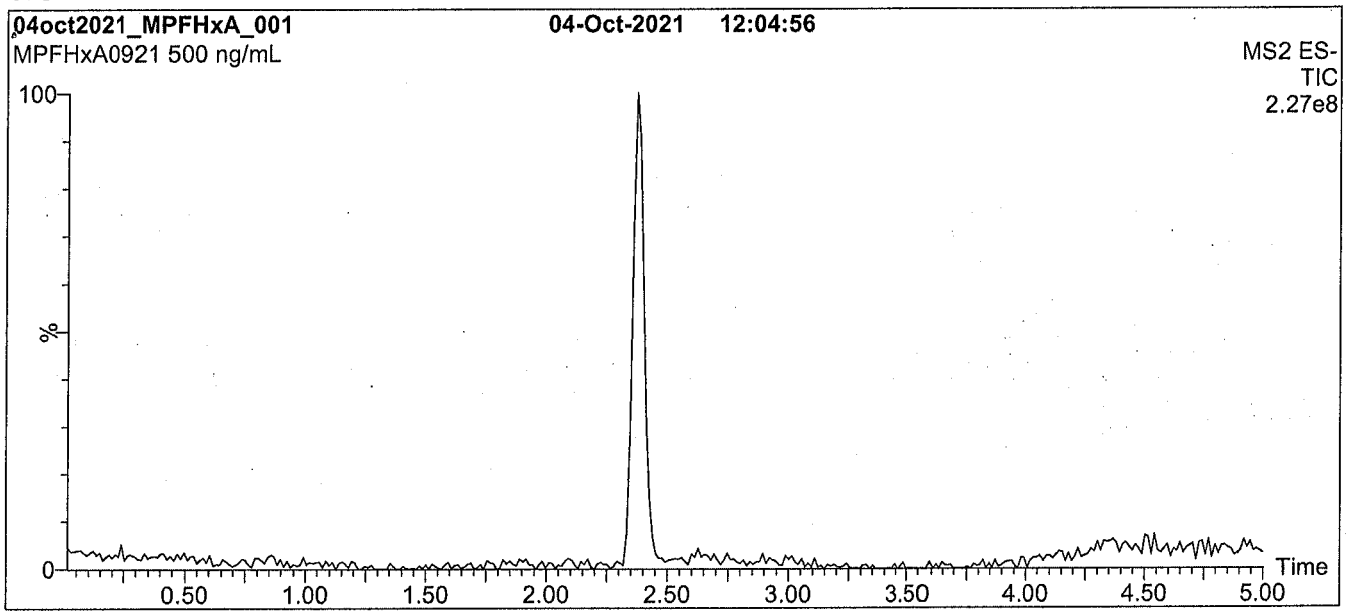
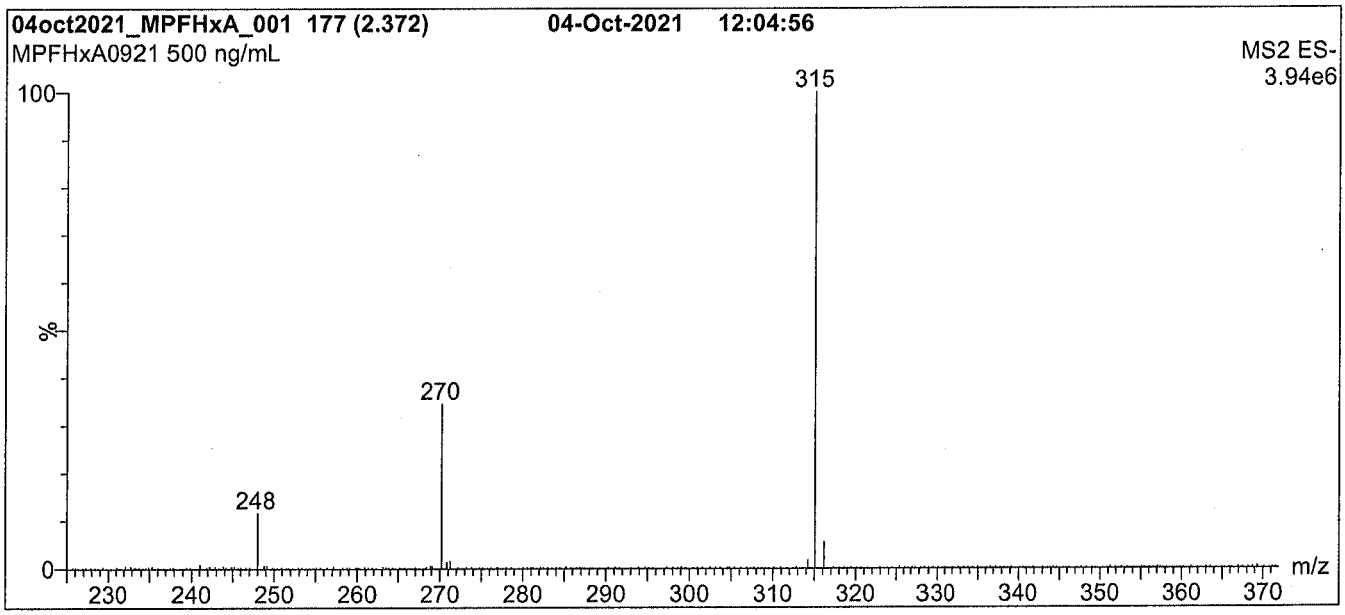




Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

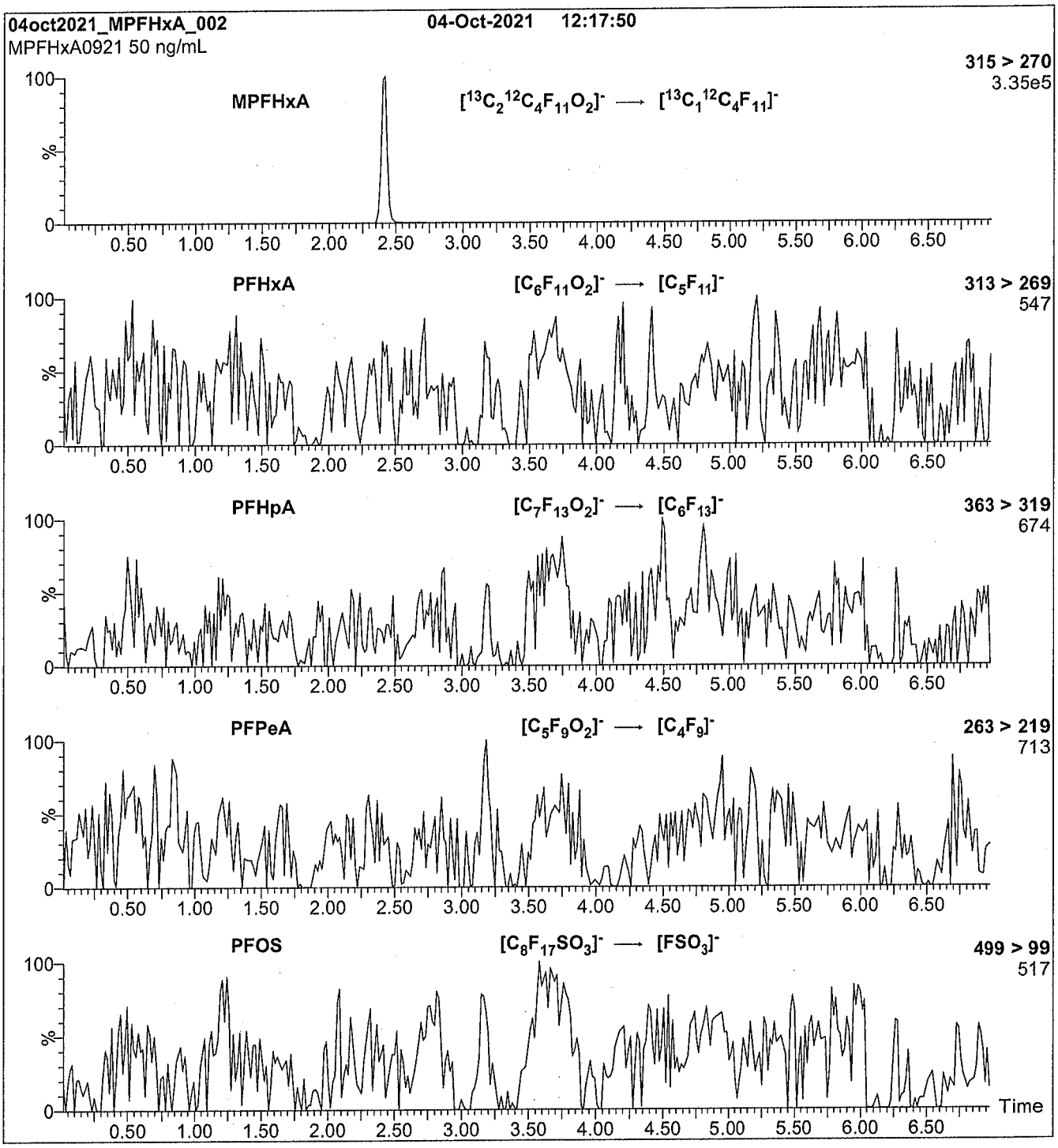
Flow: 300 µL/min

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: **MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 8

Analytical Standard Record

22A0117

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

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

Analytical Standard Record

22A0117

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

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

WELLINGTON LABORATORIES

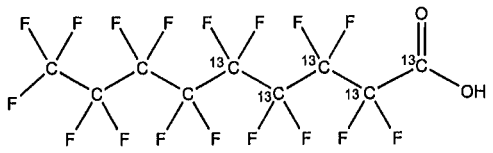
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFNA
COMPOUND: Perfluoro-n-(1,2,3,4,5-$^{13}C_5$)nonanoic acid

LOT NUMBER: MPFNA1021

STRUCTURE:

CAS #: 960315-49-5



MOLECULAR FORMULA: $^{13}C_5{}^{12}C_4HF_{17}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 469.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
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

ISOTOPIC PURITY: ≥99% ^{13}C (1,2,3,4,5-$^{13}C_5$)

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: _____ **Date:** 11/01/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17034 REFERENCE MATERIAL PRODUCER

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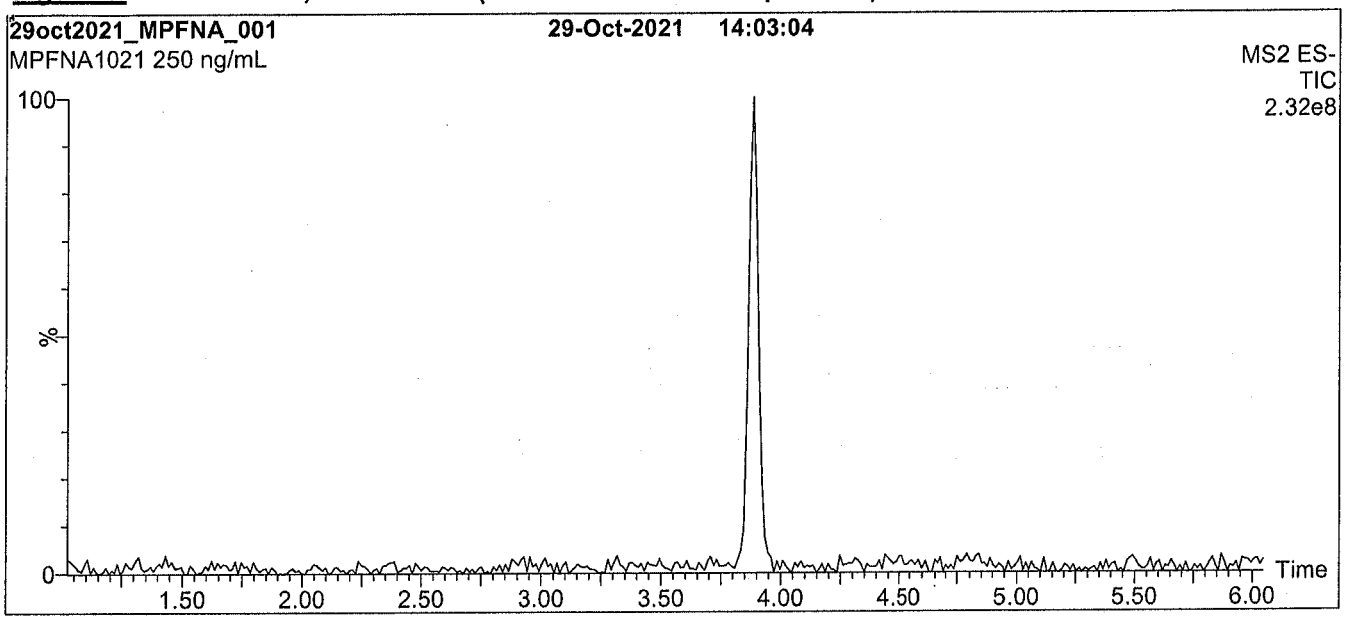
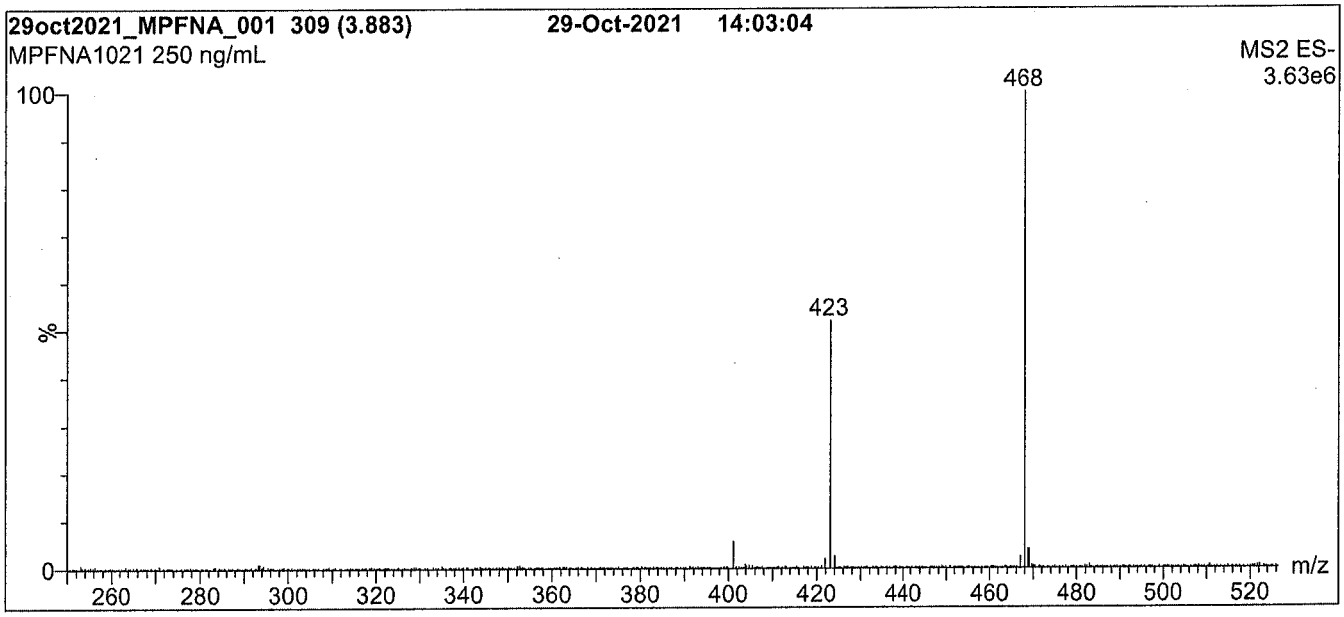




Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

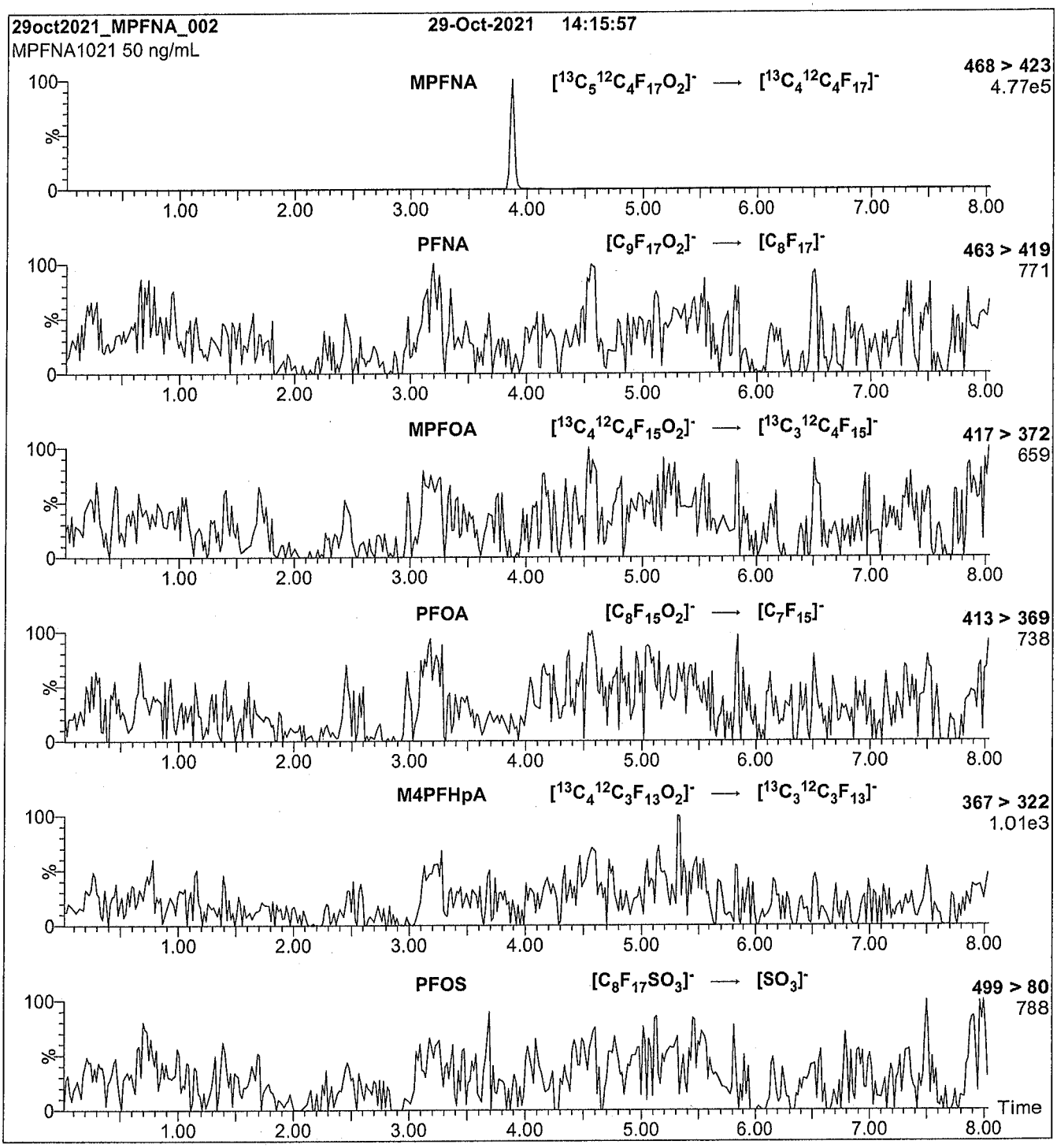
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 10

Analytical Standard Record

22A0118

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

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

Analytical Standard Record

22A0118

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

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

WELLINGTON LABORATORIES

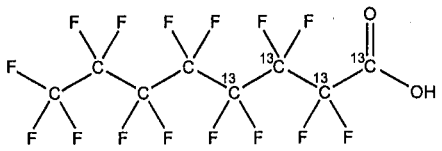
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOA
COMPOUND: Perfluoro-n-(1,2,3,4-$^{13}C_4$)octanoic acid

LOT NUMBER: MPFOA1121

STRUCTURE:

CAS #: 960315-48-4



MOLECULAR FORMULA: $^{13}C_4{}^{12}C_4HF_{15}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 418.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

ISOTOPIC PURITY: ≥99% ^{13}C (1,2,3,4-$^{13}C_4$)

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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Certified By: _____ **Date:** 12/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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where x is expressed as a relative standard uncertainty of the individual parameter.

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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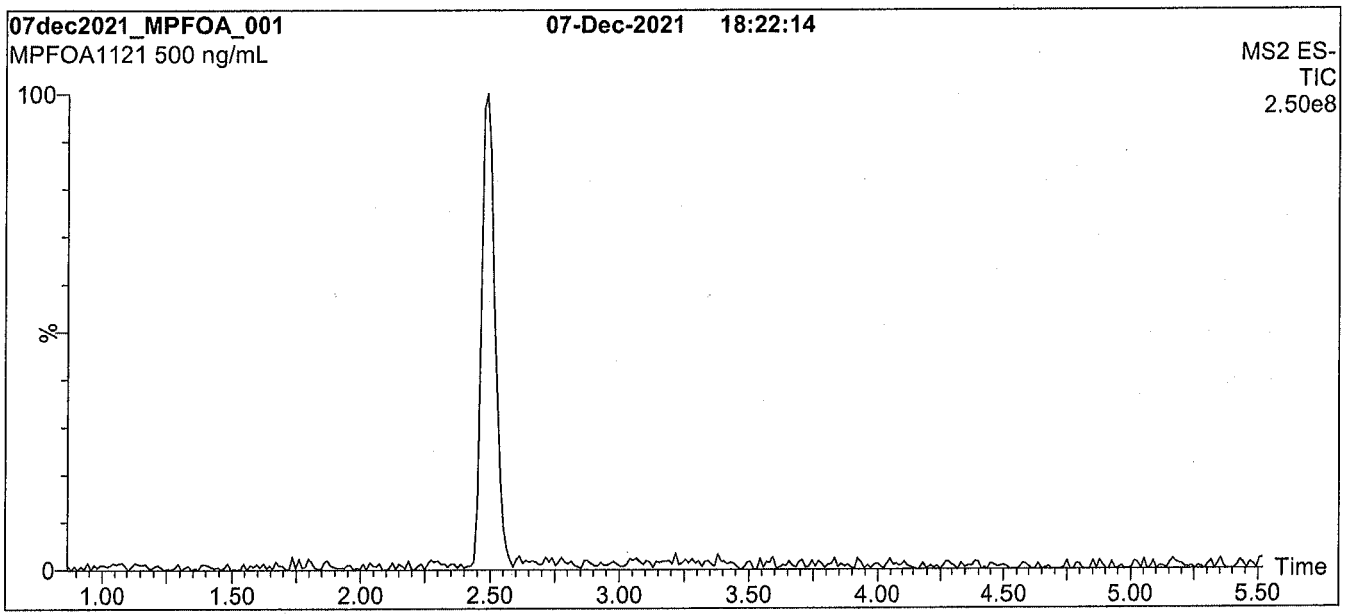
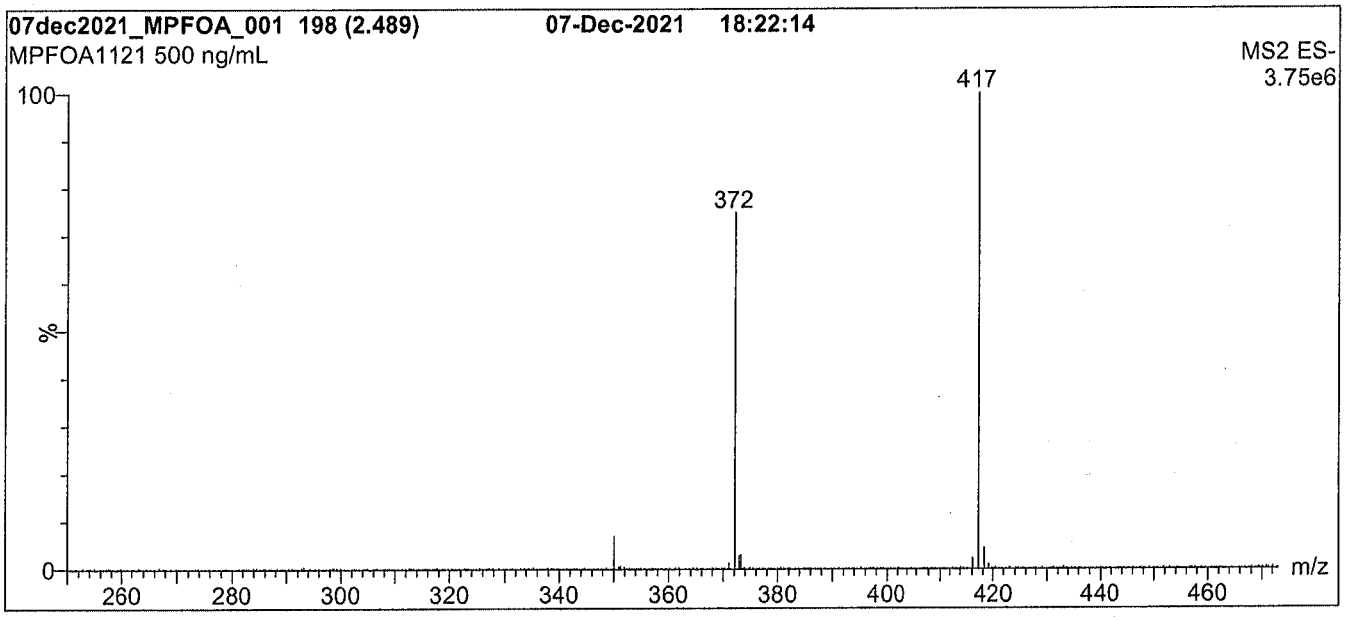
Figure 1: **MPFOA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

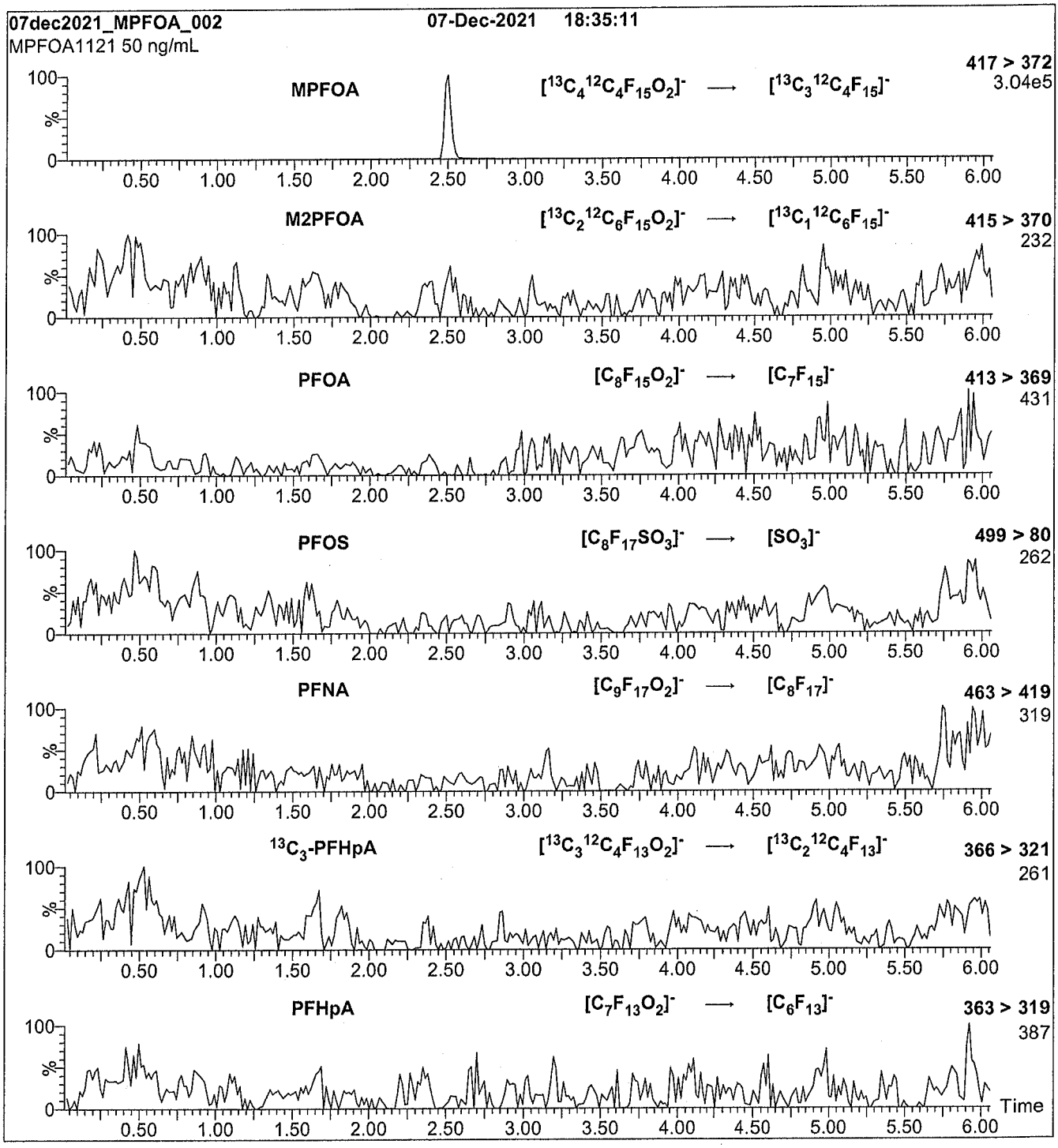
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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 µL/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

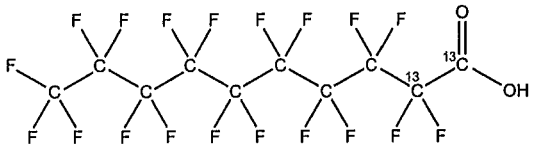
Analyte	Parent	CAS Number	Concentration	Units
13C4-PFOA		13C4-PFOA	50	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDA
LOT NUMBER: MPFDA1221
COMPOUND: Perfluoro-n-(1,2-$^{13}C_2$)decanoic acid

STRUCTURE:
CAS #: 960315-50-8



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_8HF_{19}O_2$
MOLECULAR WEIGHT: 516.07
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol, Water (<1%)
CHEMICAL PURITY: >98%
ISOTOPIC PURITY: ≥99% ^{13}C (1,2-$^{13}C_2$)
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: _____ **Date:** 12/13/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±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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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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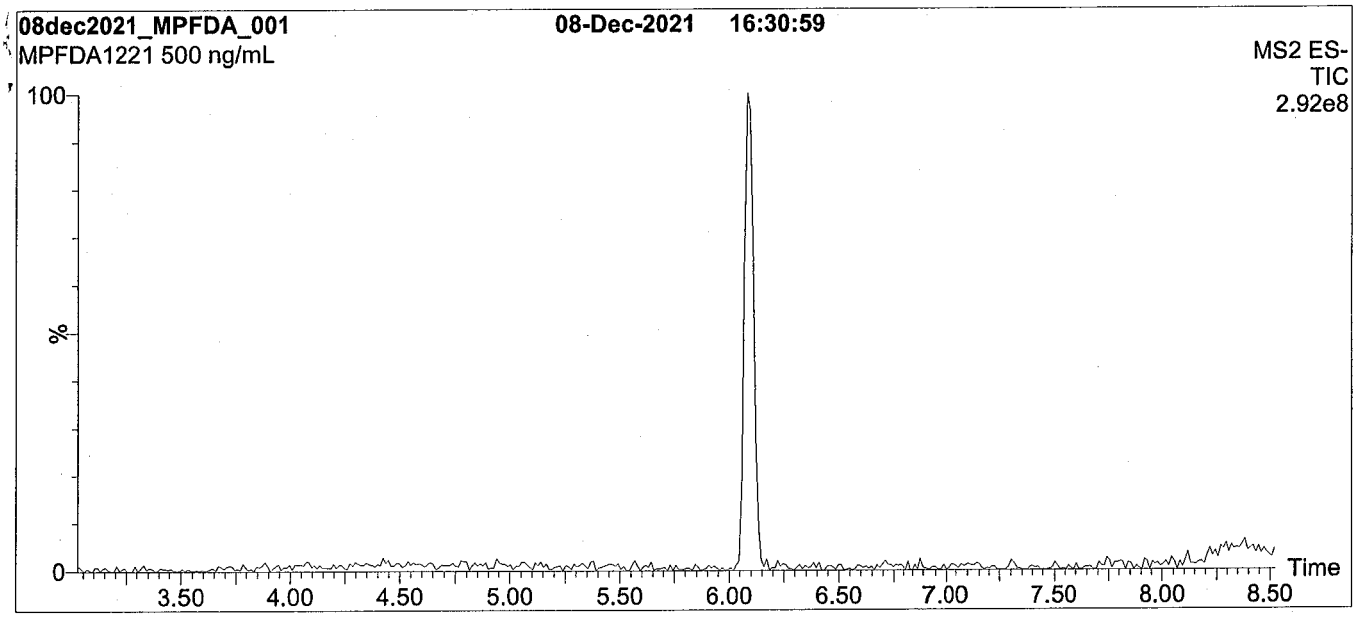
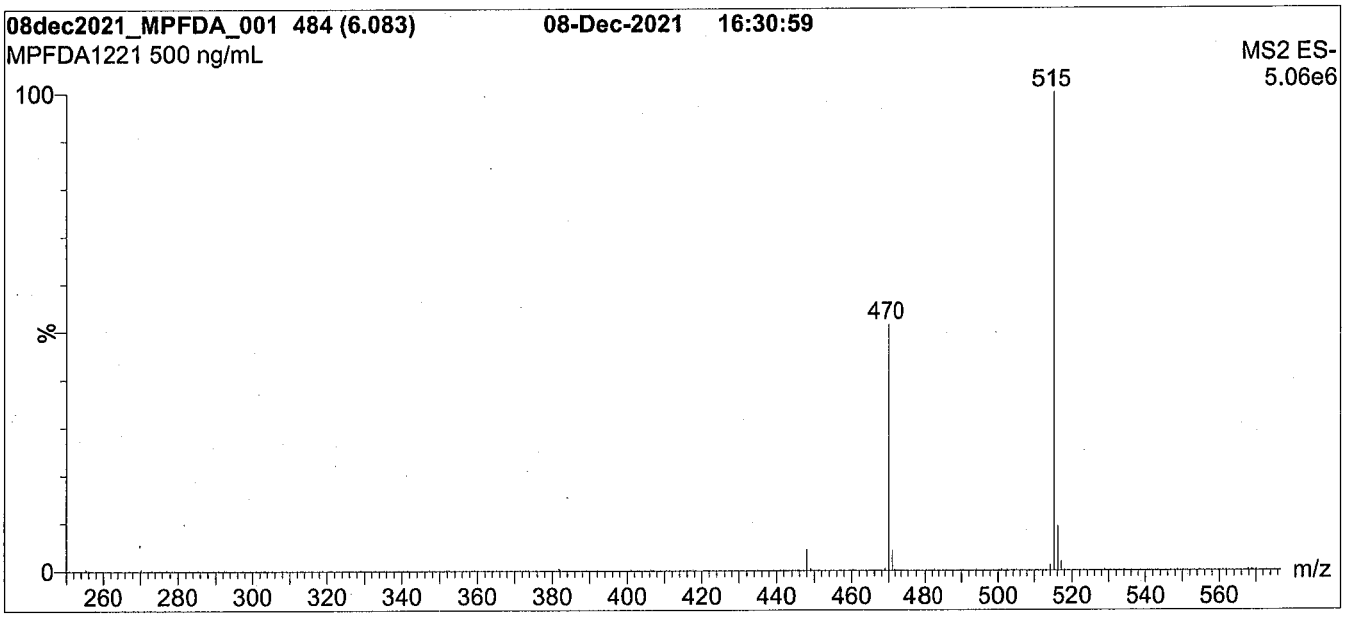




Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

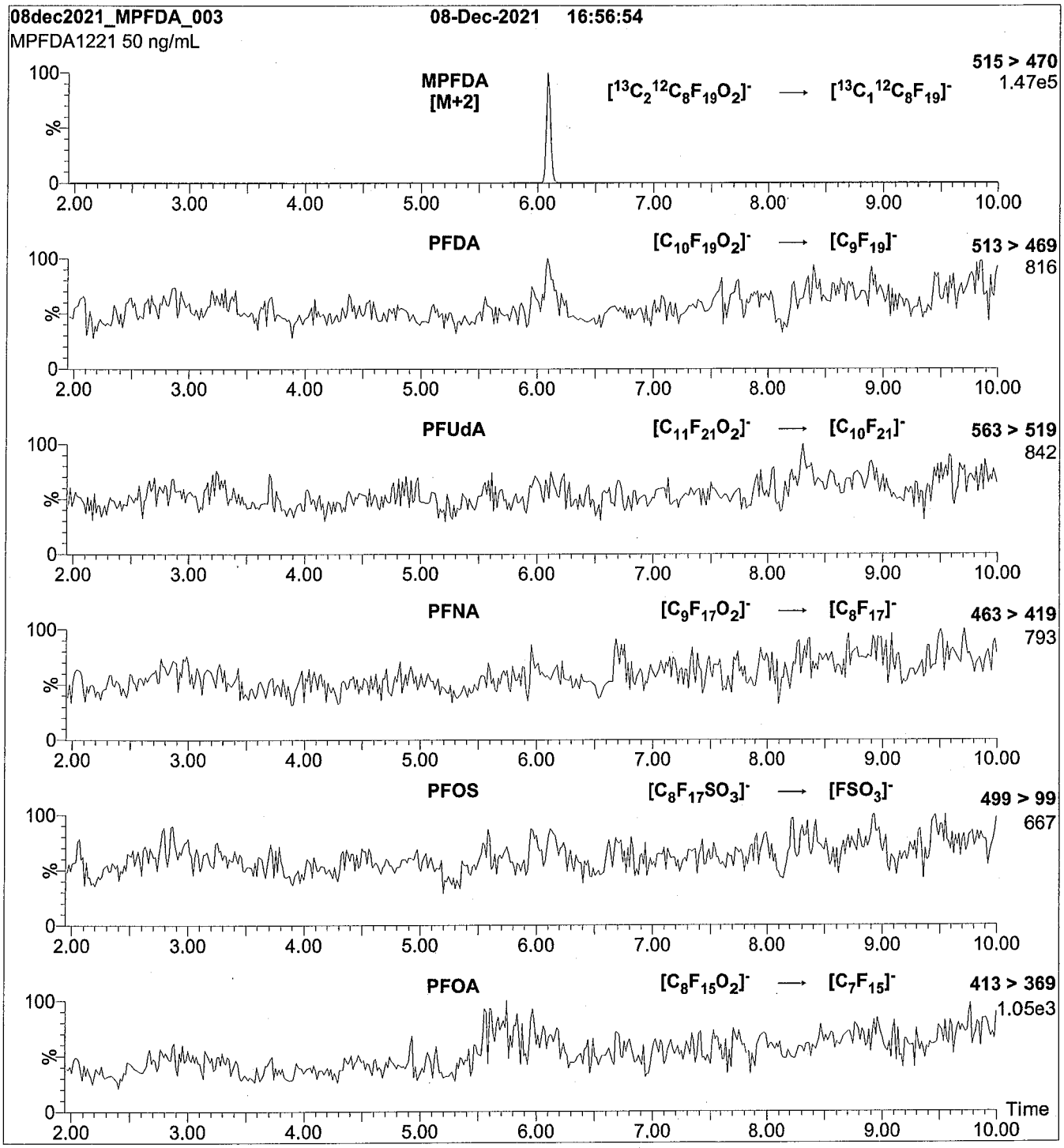
Flow: 300 µL/min

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: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

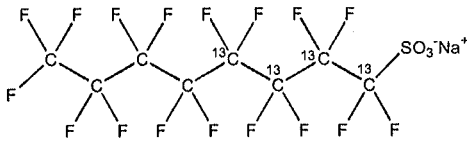
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0821

COMPOUND: Sodium perfluoro-1-(1,2,3,4-$^{13}C_4$)octanesulfonate

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



MOLECULAR FORMULA: $^{13}C_4{}^{12}C_4F_{17}SO_3Na$ **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% ^{13}C (1,2,3,4-$^{13}C_4$)

LAST TESTED: (mm/dd/yyyy) 08/18/2021

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-($^{13}C_3$)heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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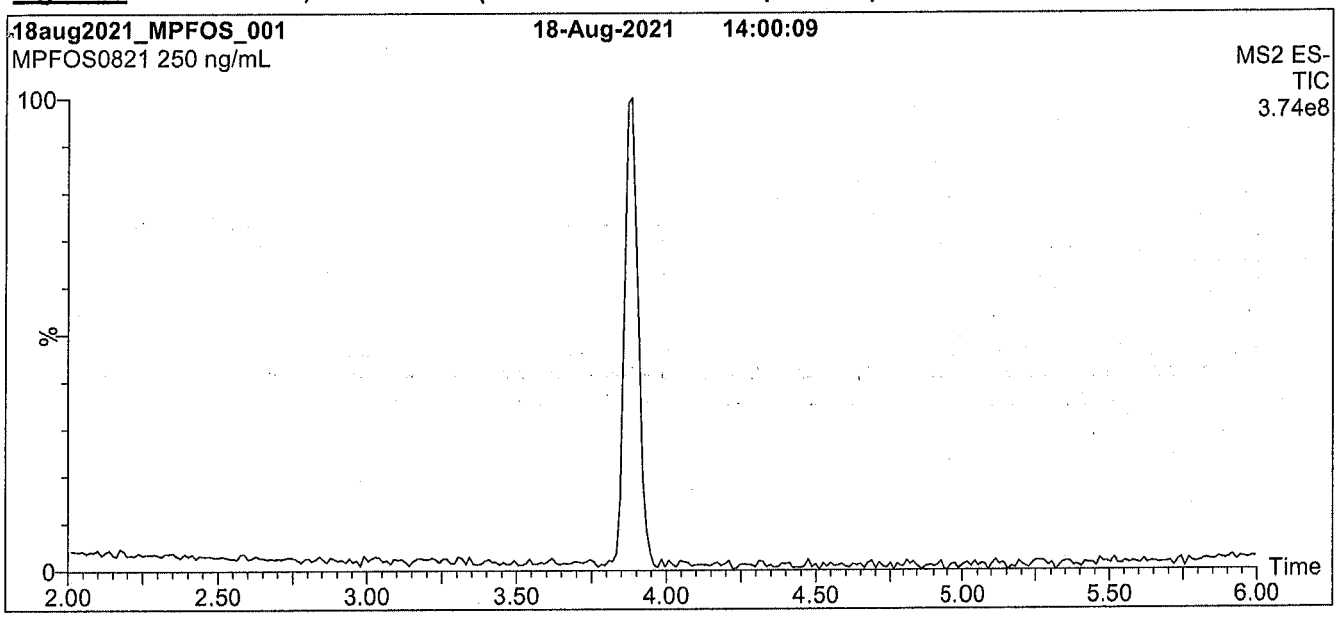
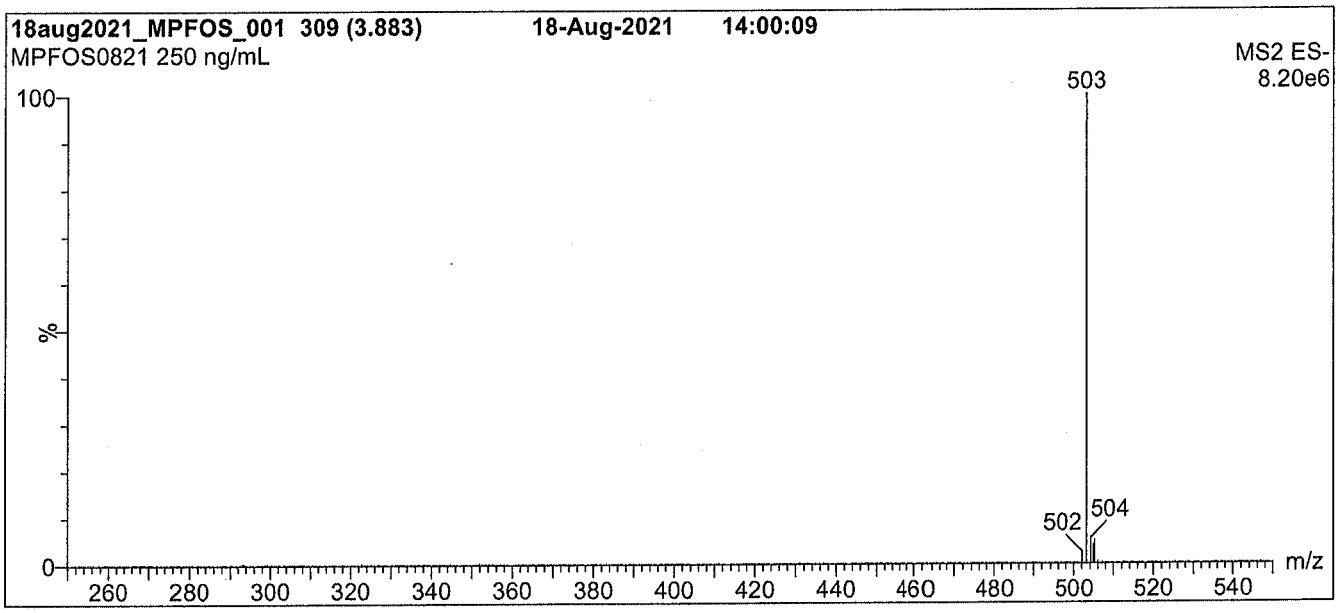




Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

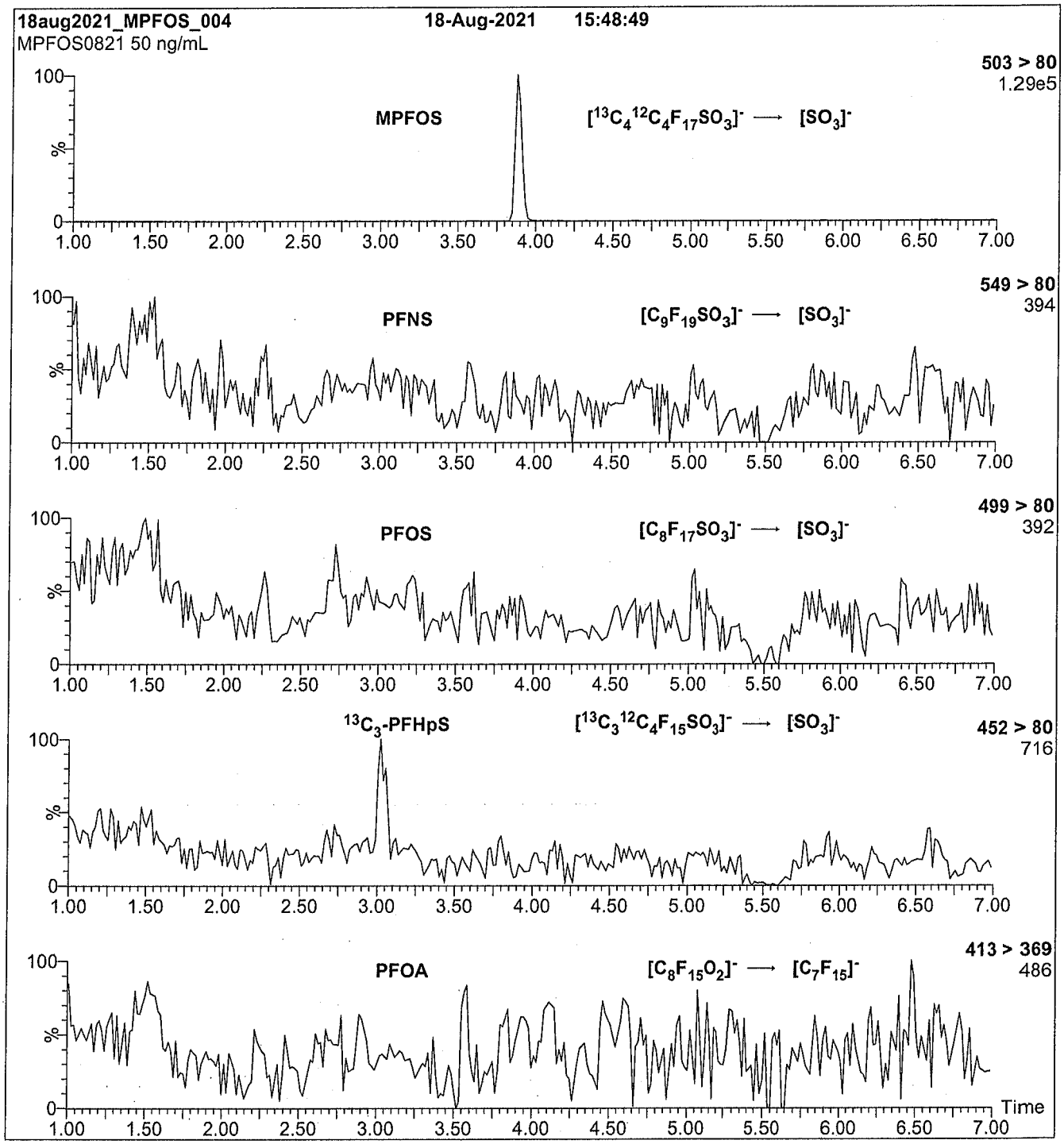
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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 µL/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

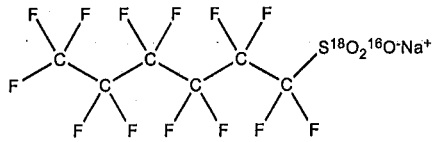
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS

LOT NUMBER: MPFHxS1021

COMPOUND: Sodium perfluoro-1-hexane($^{18}O_2$)sulfonate

STRUCTURE:



CAS #: 1585941-14-5

MOLECULAR FORMULA: $C_6F_{13}S^{18}O_2{}^{16}ONa$

MOLECULAR WEIGHT: 426.10

CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
47.4 ± 2.4 µg/mL (MPFHxS acid)
47.3 ± 2.4 µg/mL (MPFHxS anion)

SOLVENT(S): Methanol

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: >94% ($^{18}O_2$)

LAST TESTED: (mm/dd/yyyy) 10/29/2021

EXPIRY DATE: (mm/dd/yyyy) 10/29/2026

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS ($C_6F_{13}S^{18}O_2{}^{16}O^-$) has been observed to be up to 10% lower than for PFHxS ($C_6F_{13}S^{16}O_3^-$) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane($^{18}O_2$)sulfonate ($^{18}O_2$-PFOS) and ~0.3% of sodium perfluoro-1-heptane($^{18}O_2$)sulfonate ($^{18}O_2$-PFHpS).
- Due to the isotopic purity of the starting material ($^{18}O_2$ >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: _____ **Date:** 11/05/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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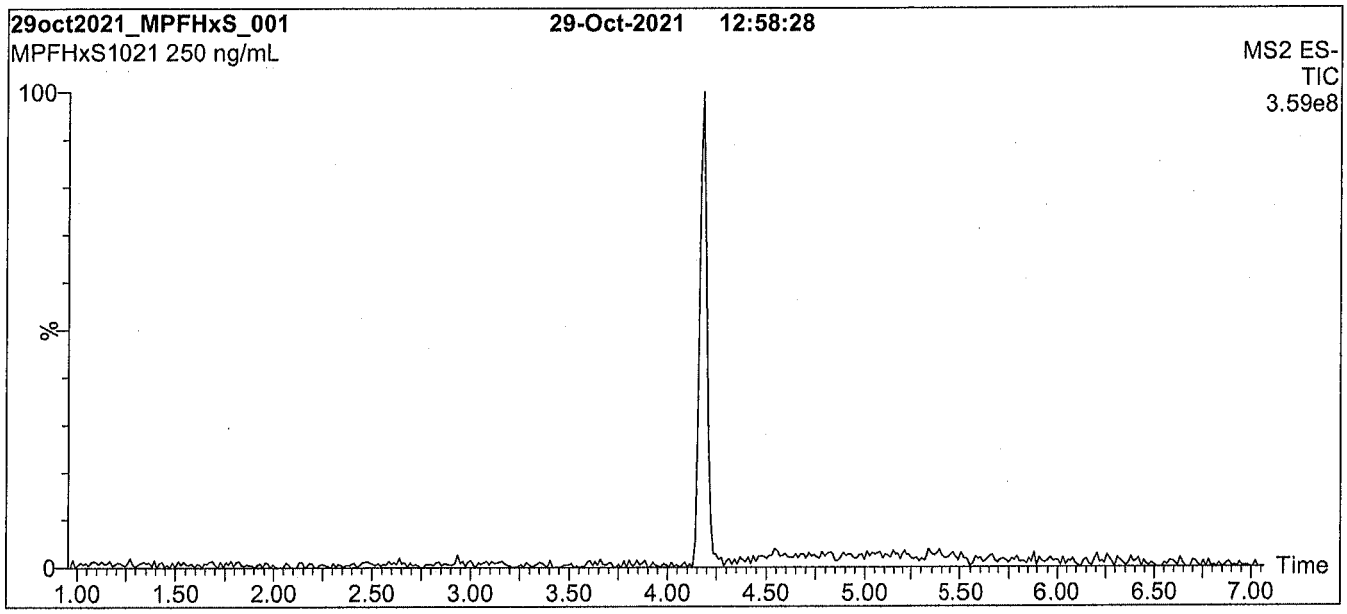
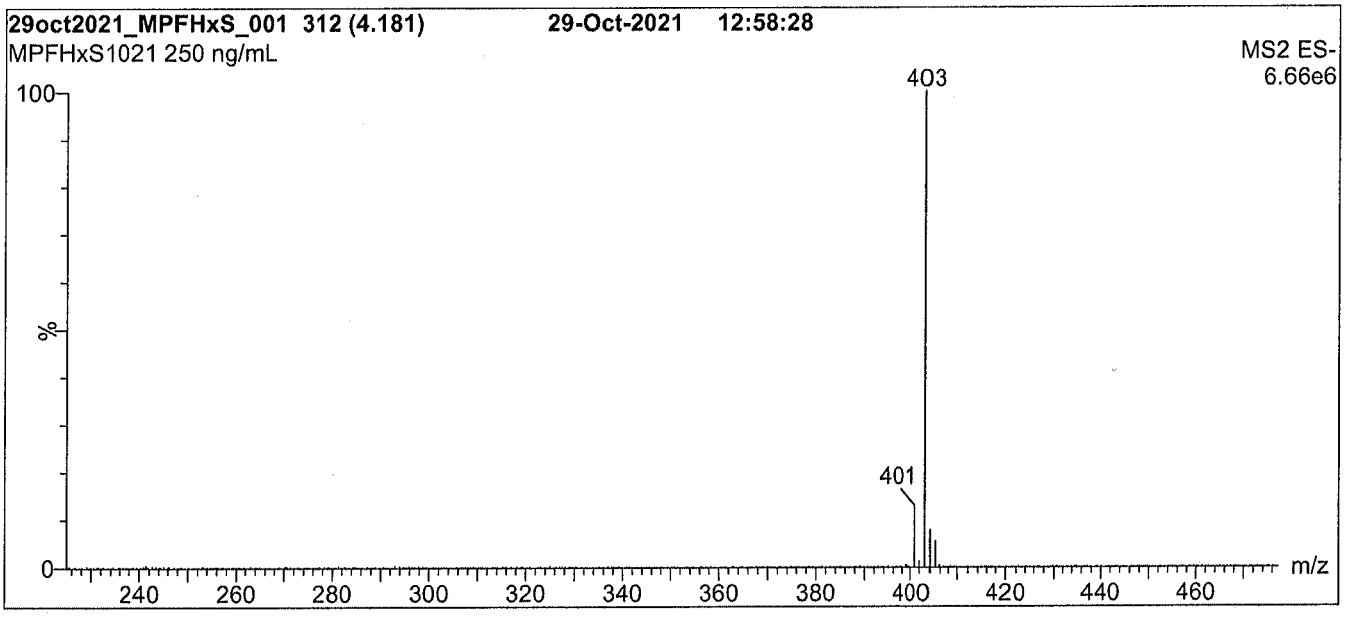
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

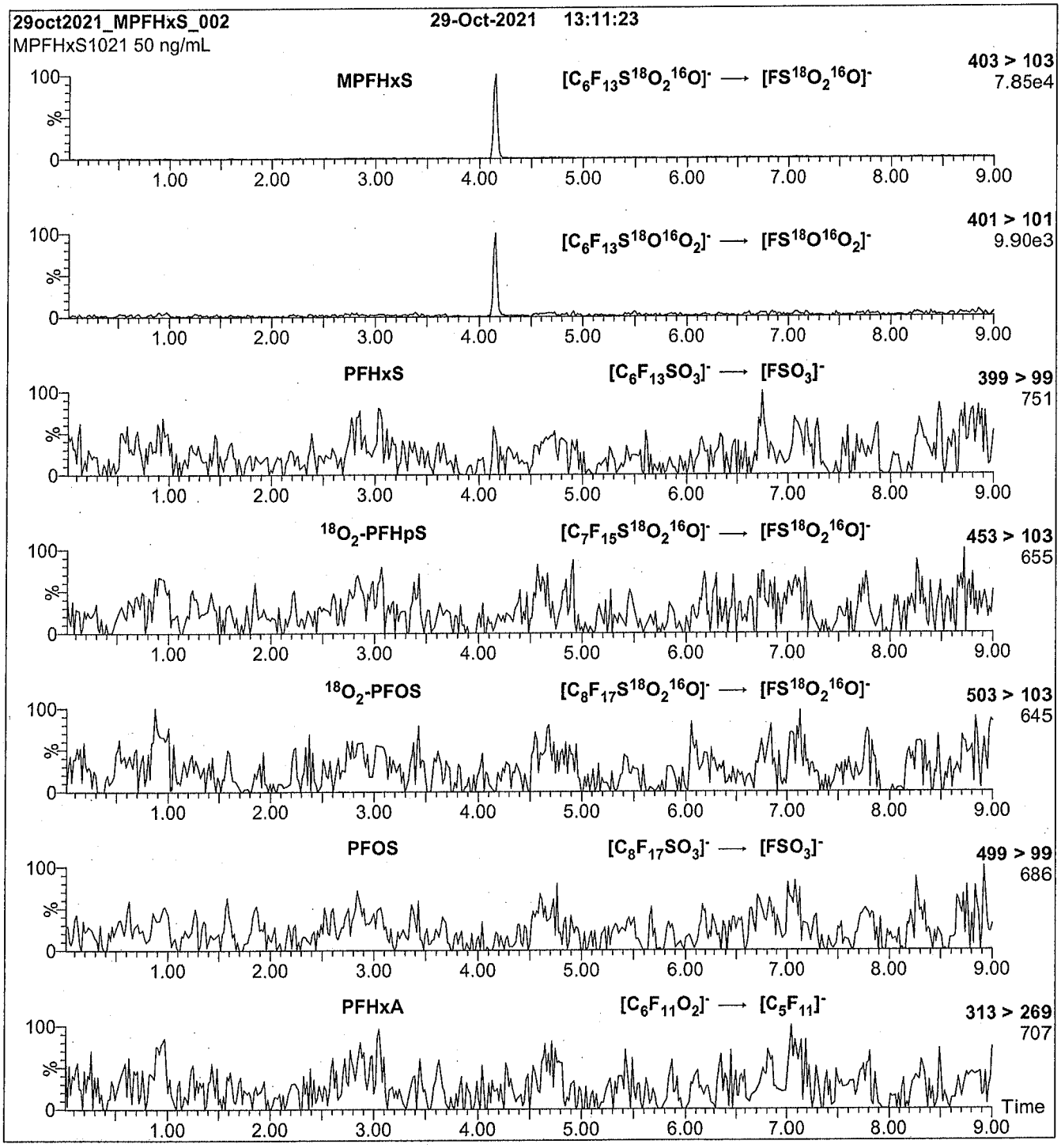
Flow: 300 µL/min

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: **MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 µL/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
18O2-PFHXS		18O2-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
18O2-PFHXS		18O2-PFHXS	50	ug/mL

Analytical Standard Record

22A0234

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

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

Parent Standards used:

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

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13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHXS	22A0122	18O2-PFHXS	5	ug/mL

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

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13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHXS	22A0122	18O2-PFHXS	5	ug/mL

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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

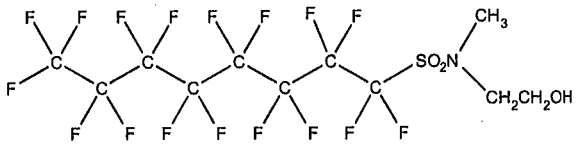
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M 22C0307

COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

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



MOLECULAR FORMULA: $C_{11}H_8F_{17}NO_3S$ **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: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

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

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 ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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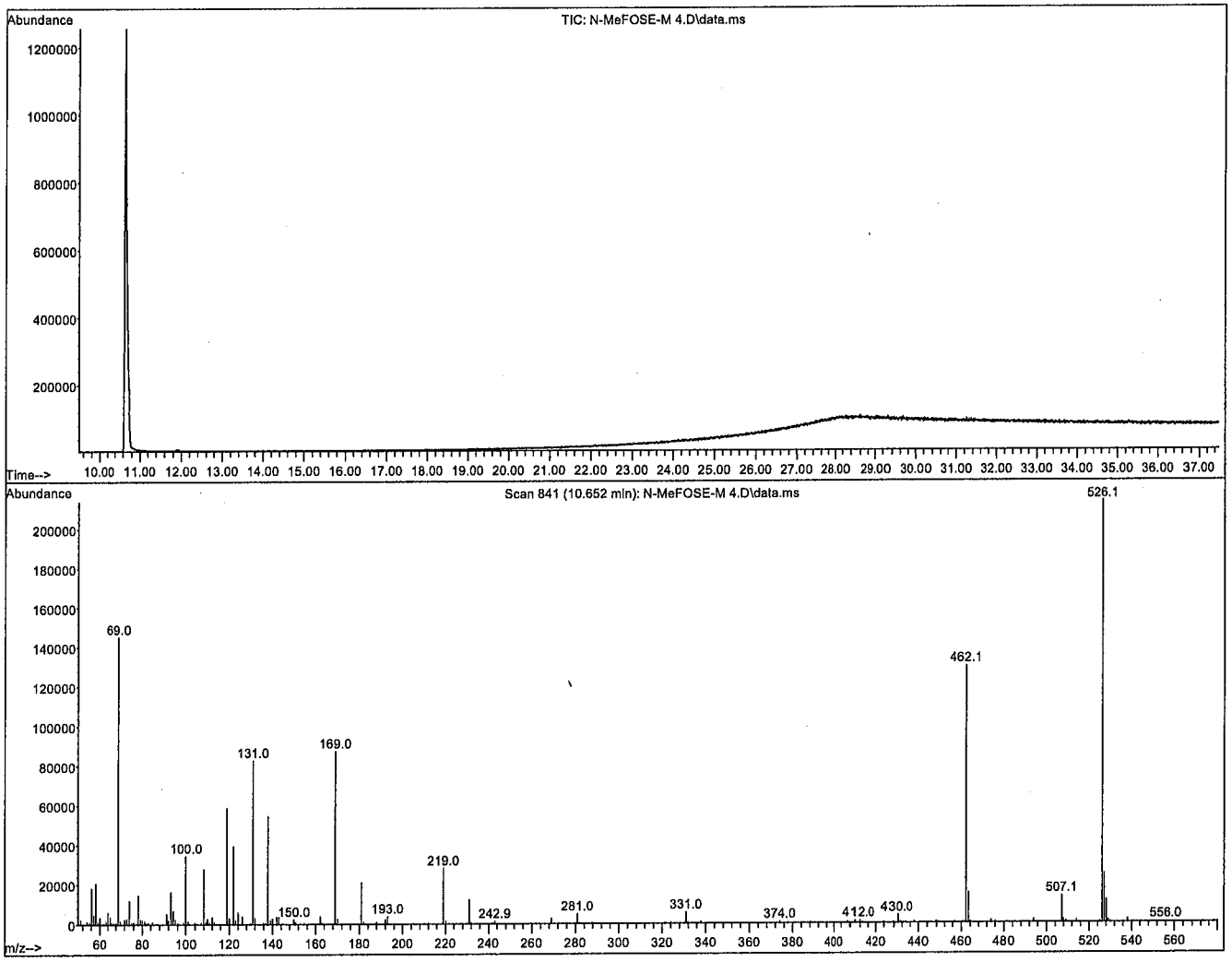
Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



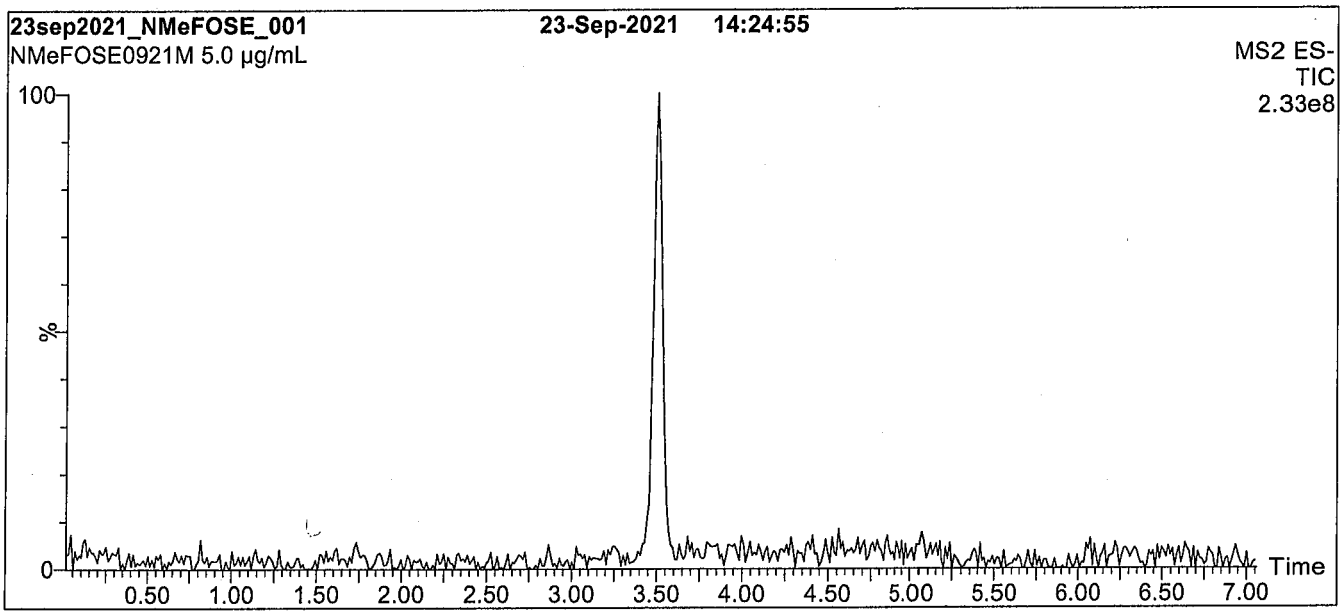
Conditions for Figure 1:

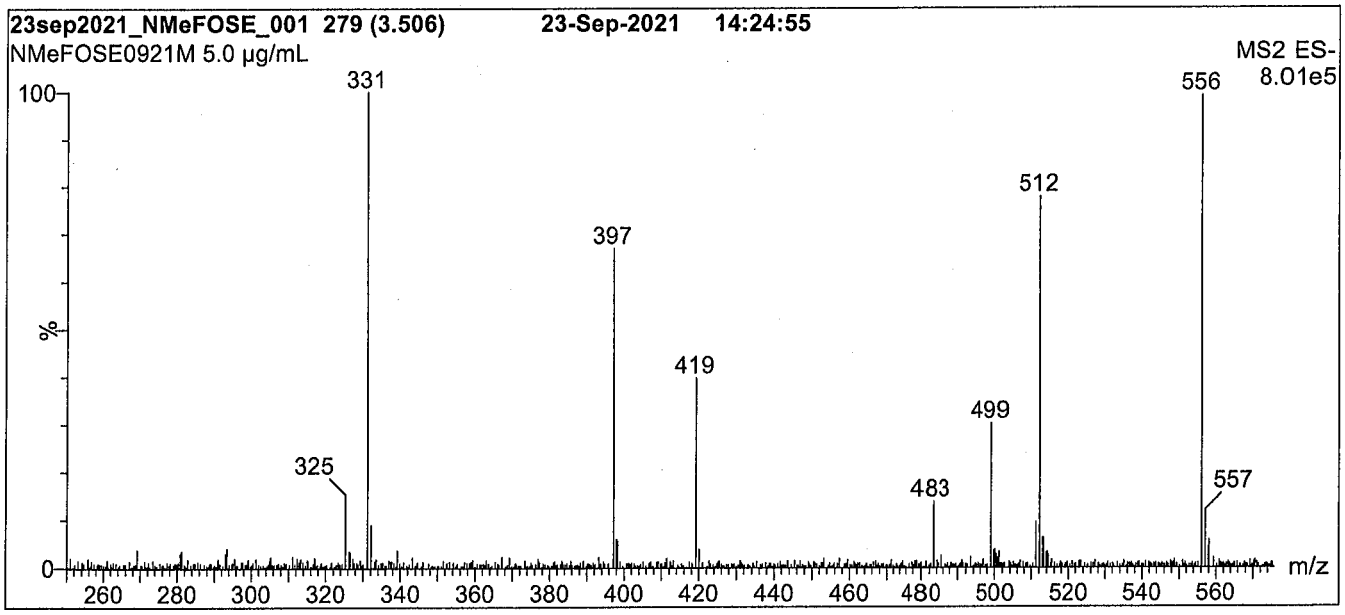
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 310°C 310°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 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

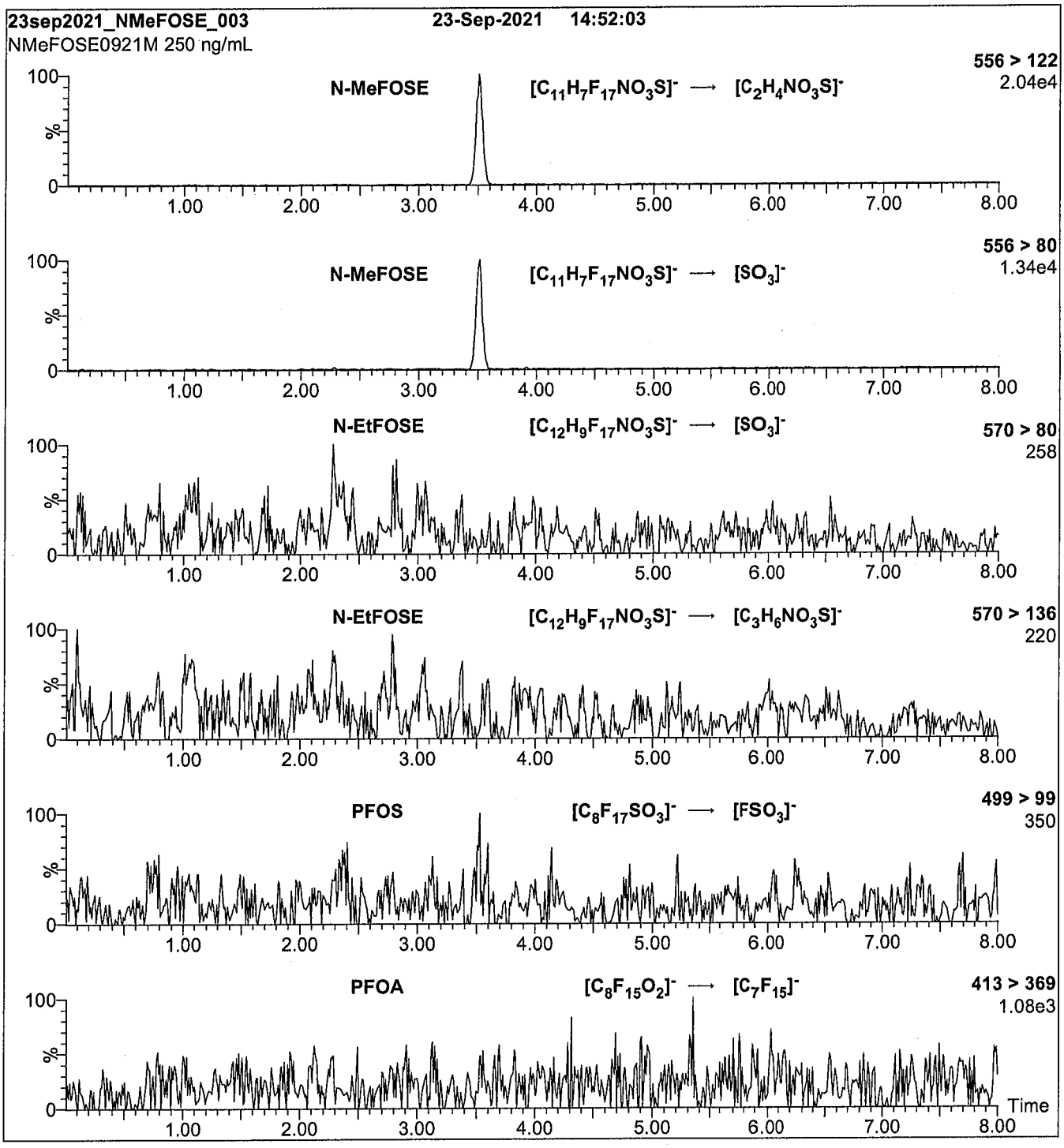
Flow: 300 µL/min

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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 36

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

Reviewed By

Date

WELLINGTON LABORATORIES

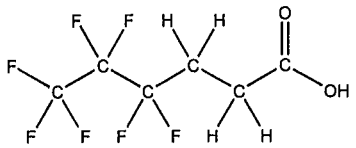
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122
22C0308

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: $C_6H_5F_7O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 02/04/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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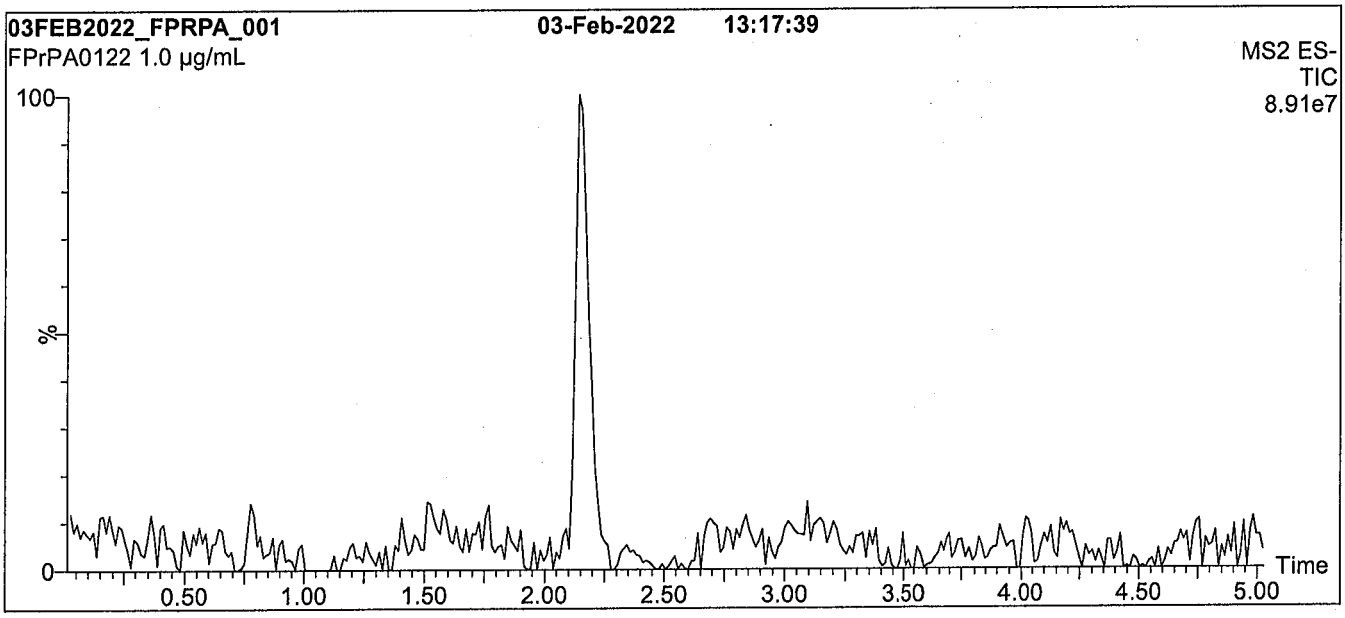
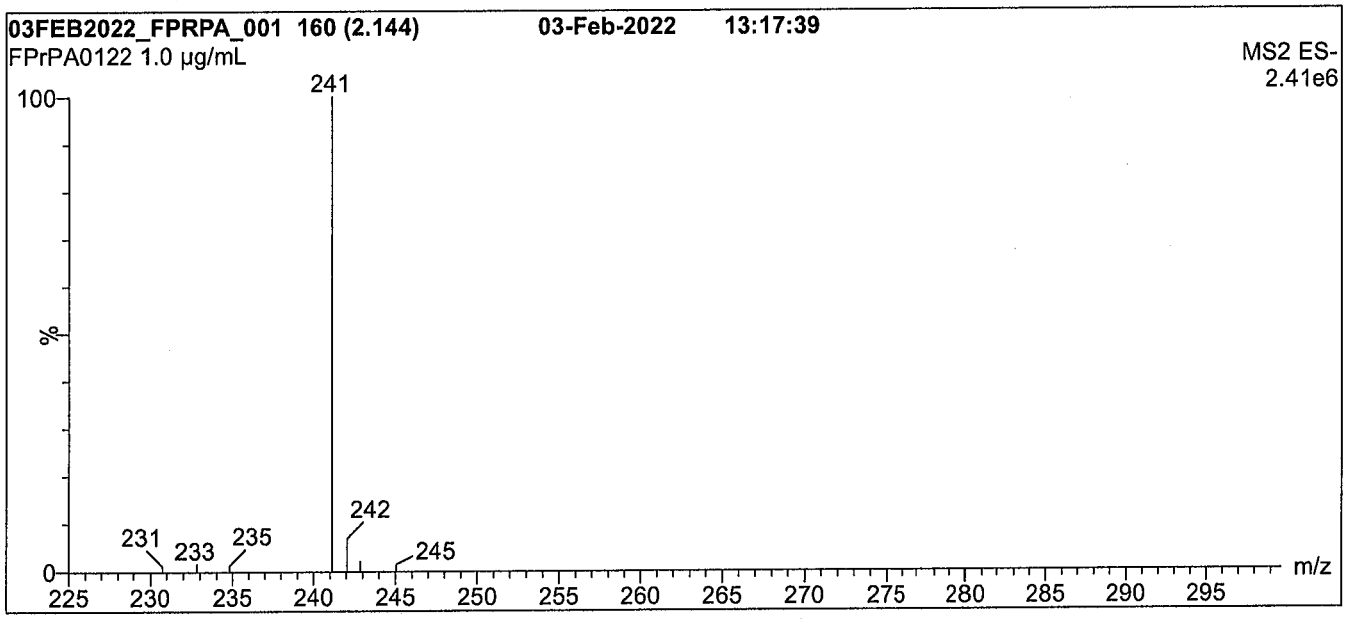
Figure 1: **FPrPA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

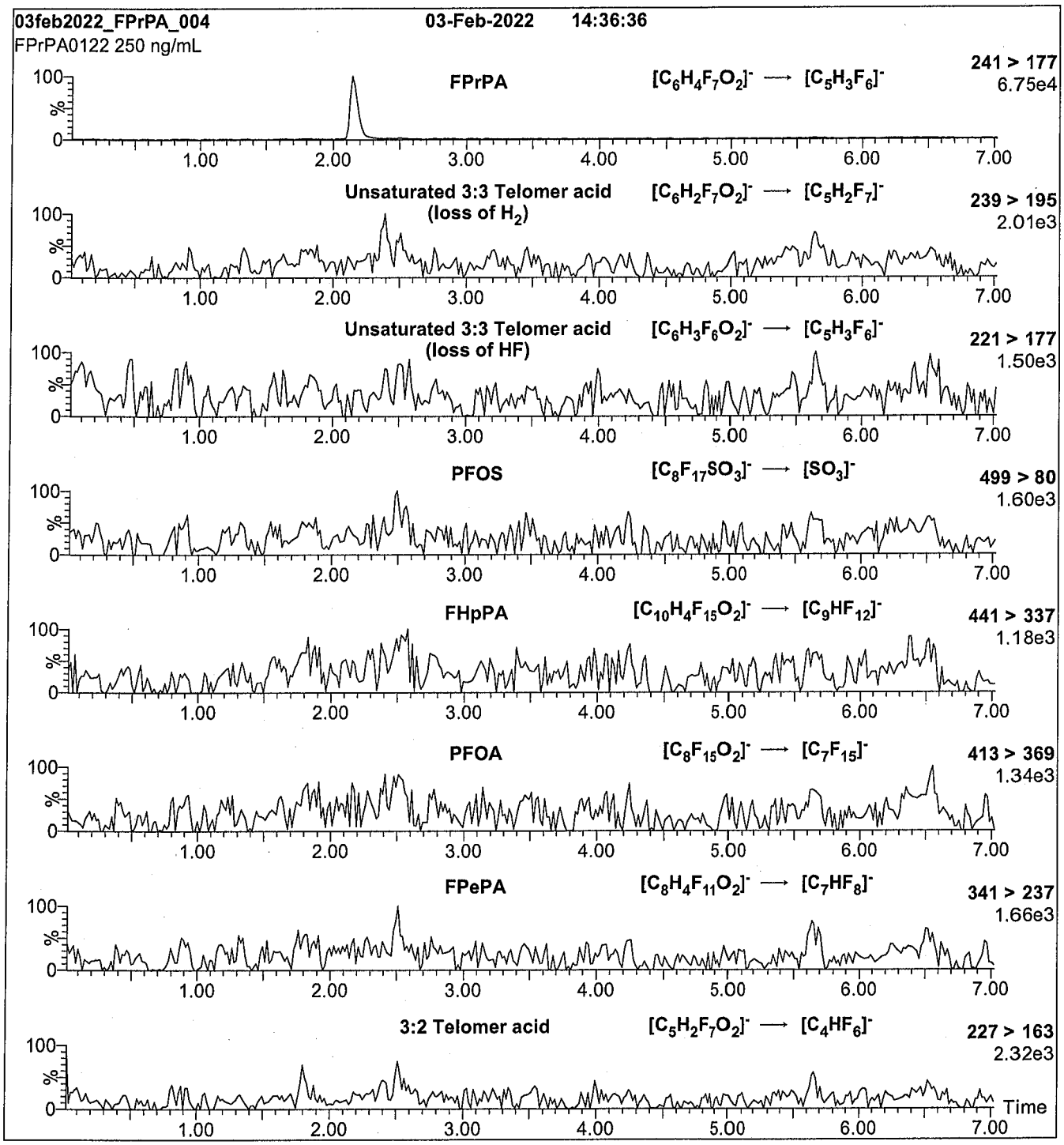
Flow: 300 µL/min

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)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3
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

Reviewed By

Date

WELLINGTON LABORATORIES

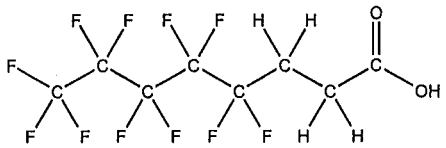
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1221
22C0309

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/05/2022
EXPIRY DATE: (mm/dd/yyyy) 01/05/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{1}H NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 01/06/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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HANDLING:

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±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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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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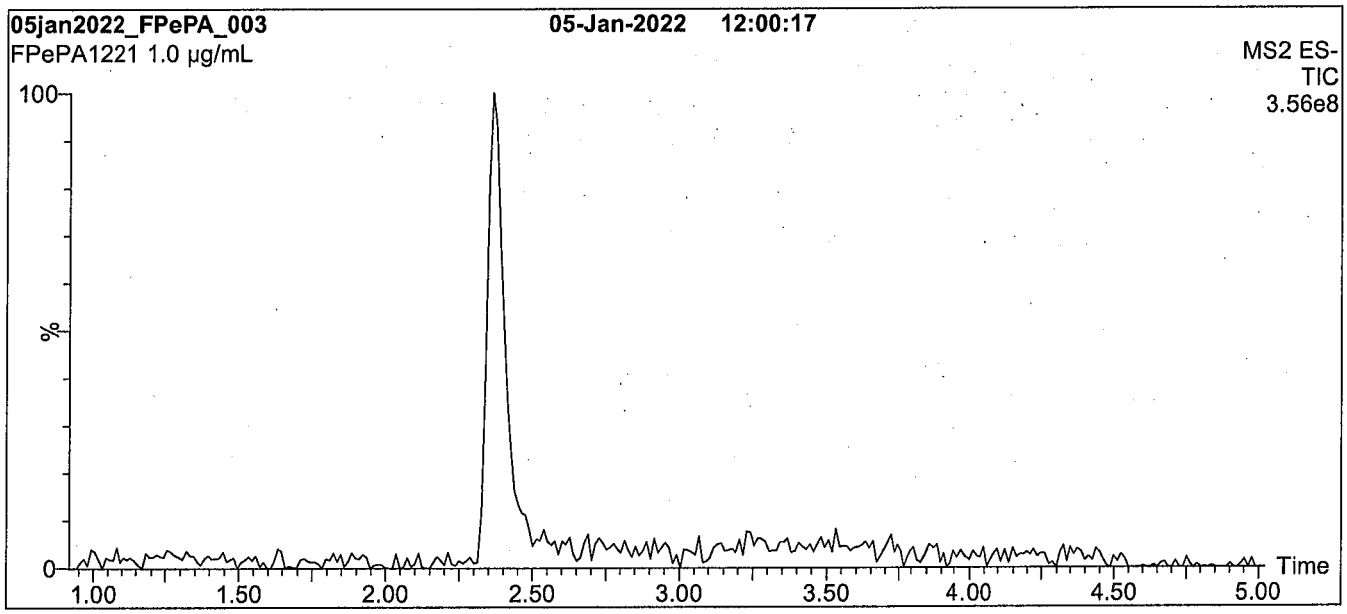
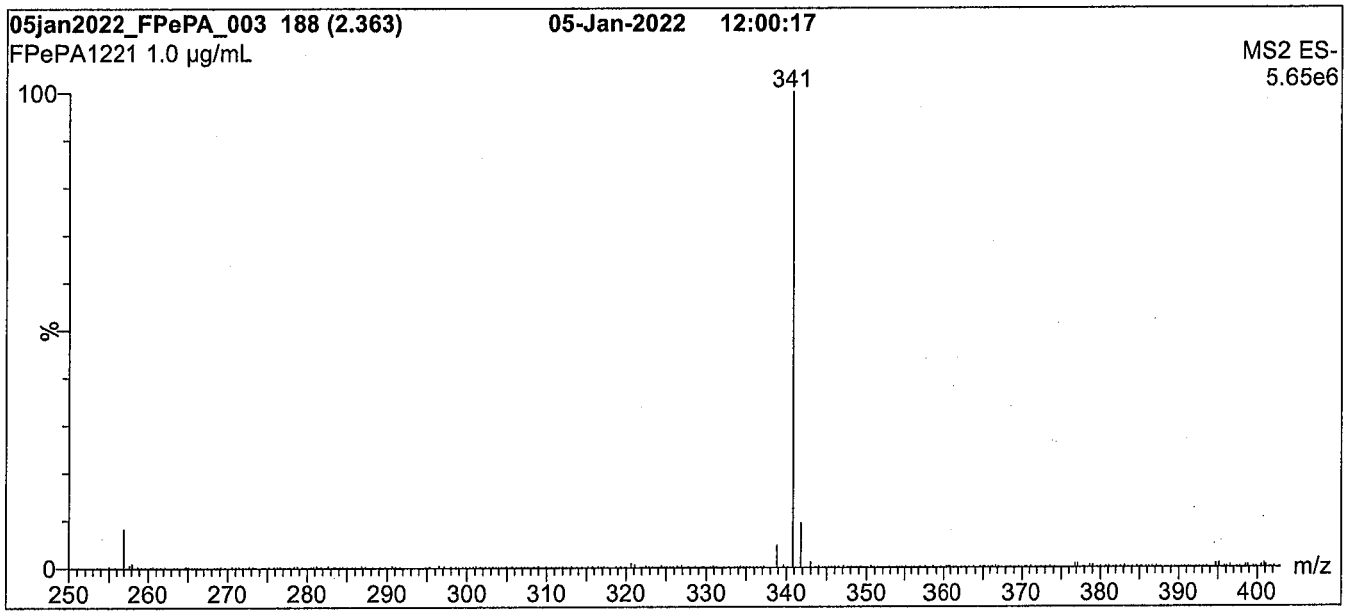




Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

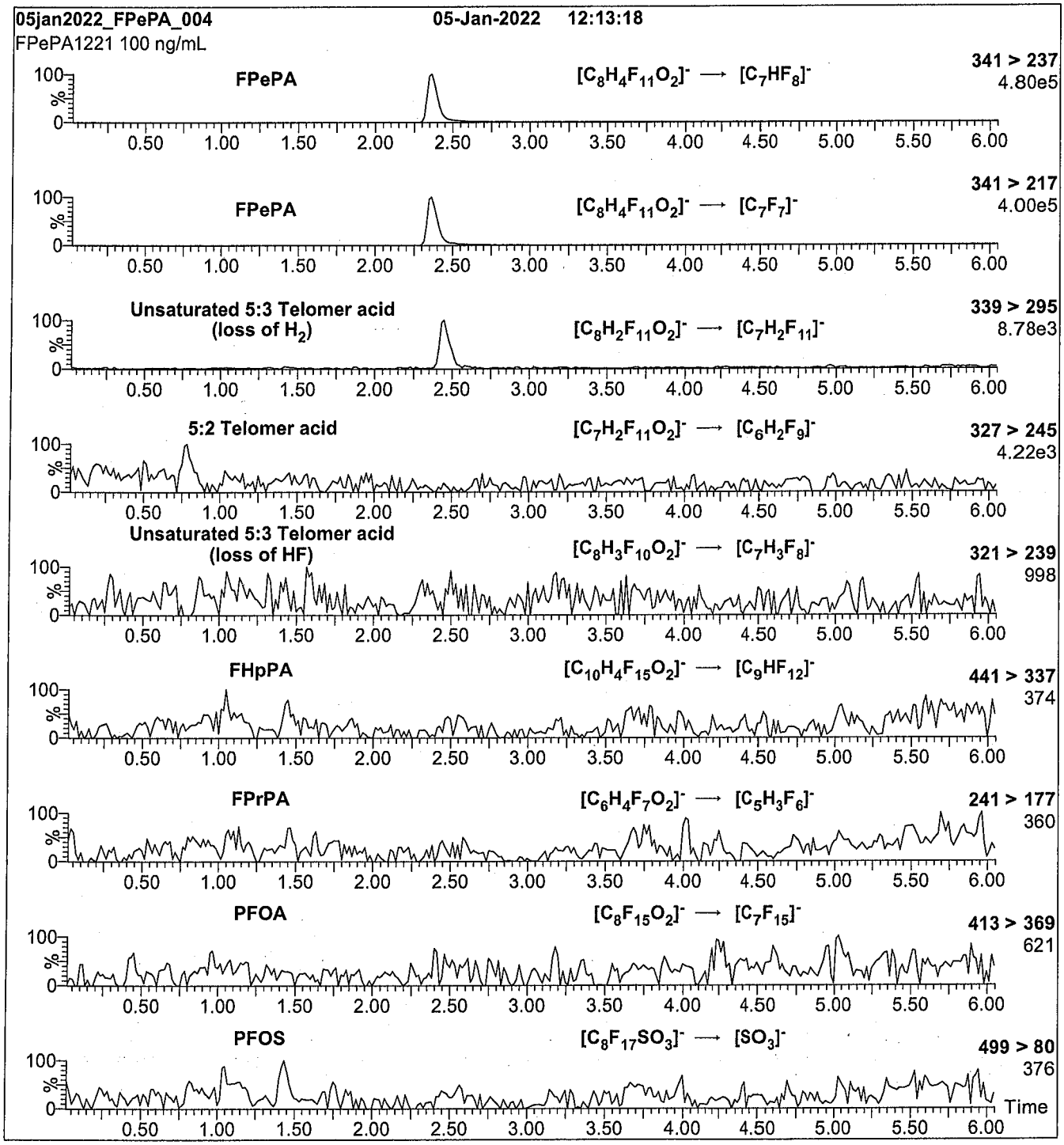
Flow: 300 µL/min

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 µL/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#: FPePA1221)
Final Volume (mls):	1	Department:	PFAS
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

Reviewed By

Date

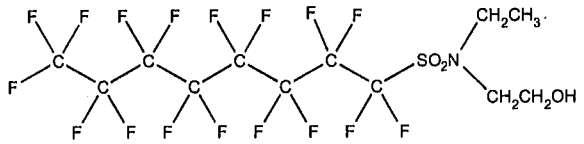
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M

COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol 22C0310

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



MOLECULAR FORMULA: $C_{12}H_{10}F_{17}NO_3S$ **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.

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Certified By: _____ **Date:** 10/20/2021 (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:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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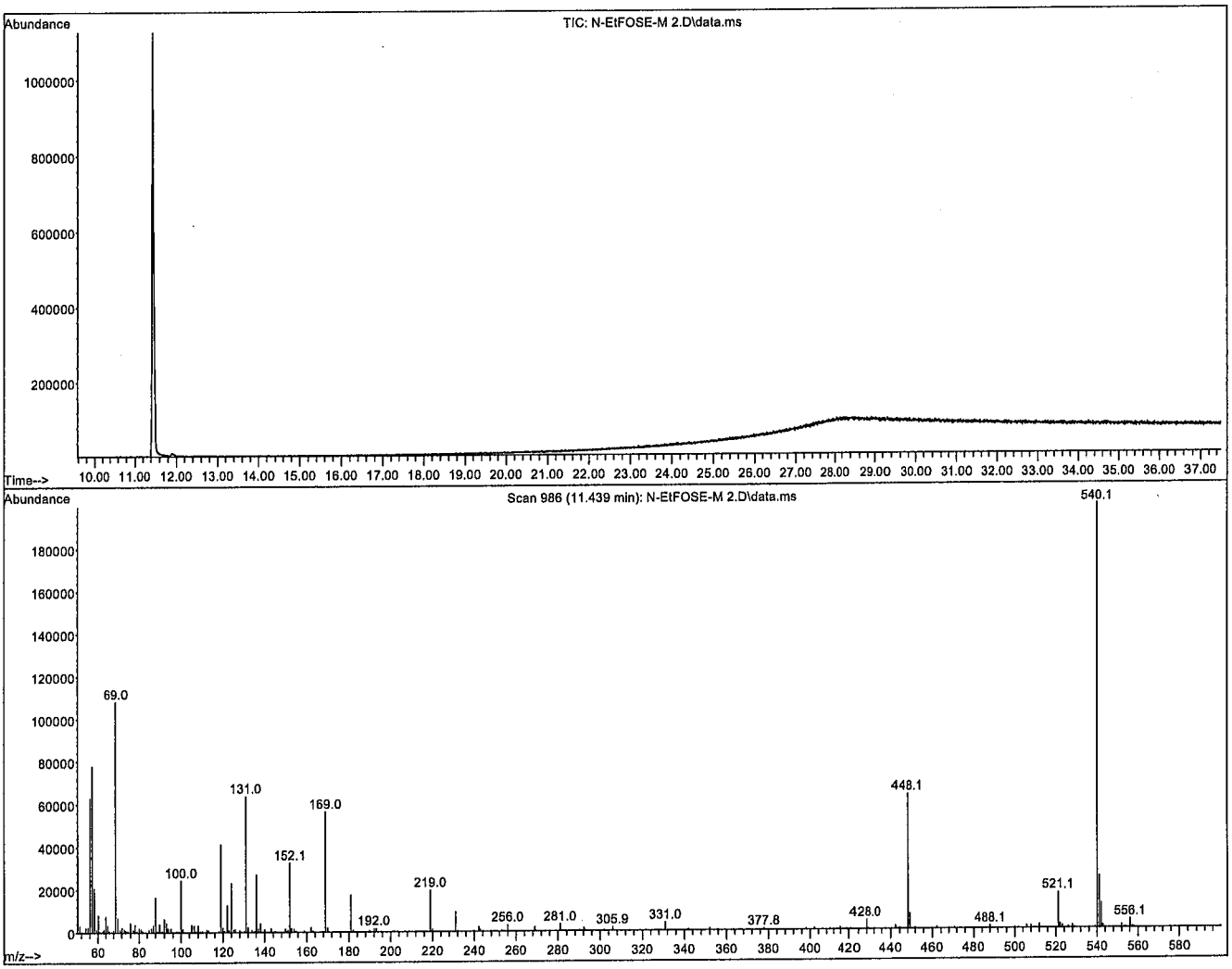
Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



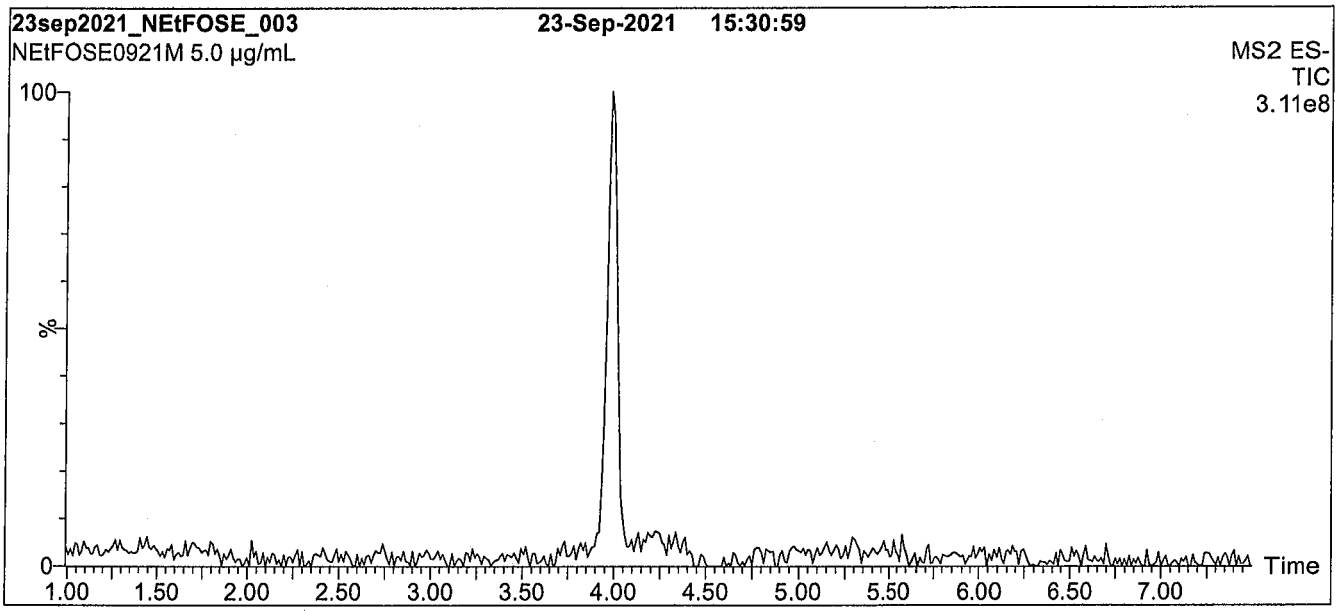
Conditions for Figure 1:

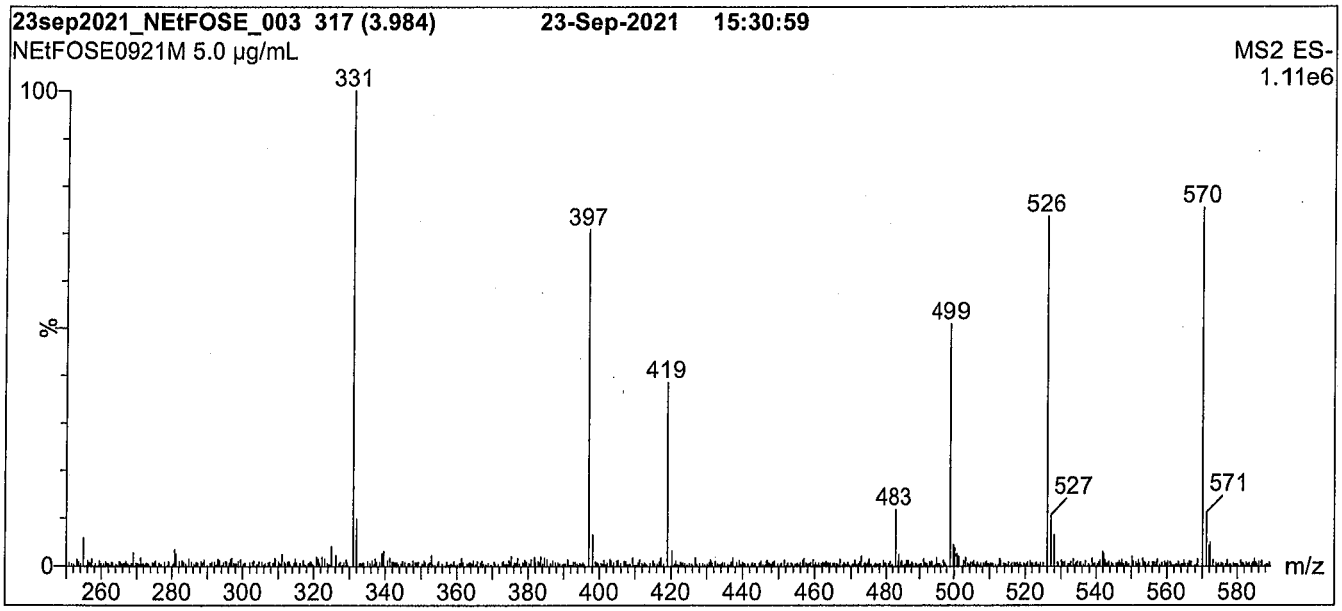
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 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

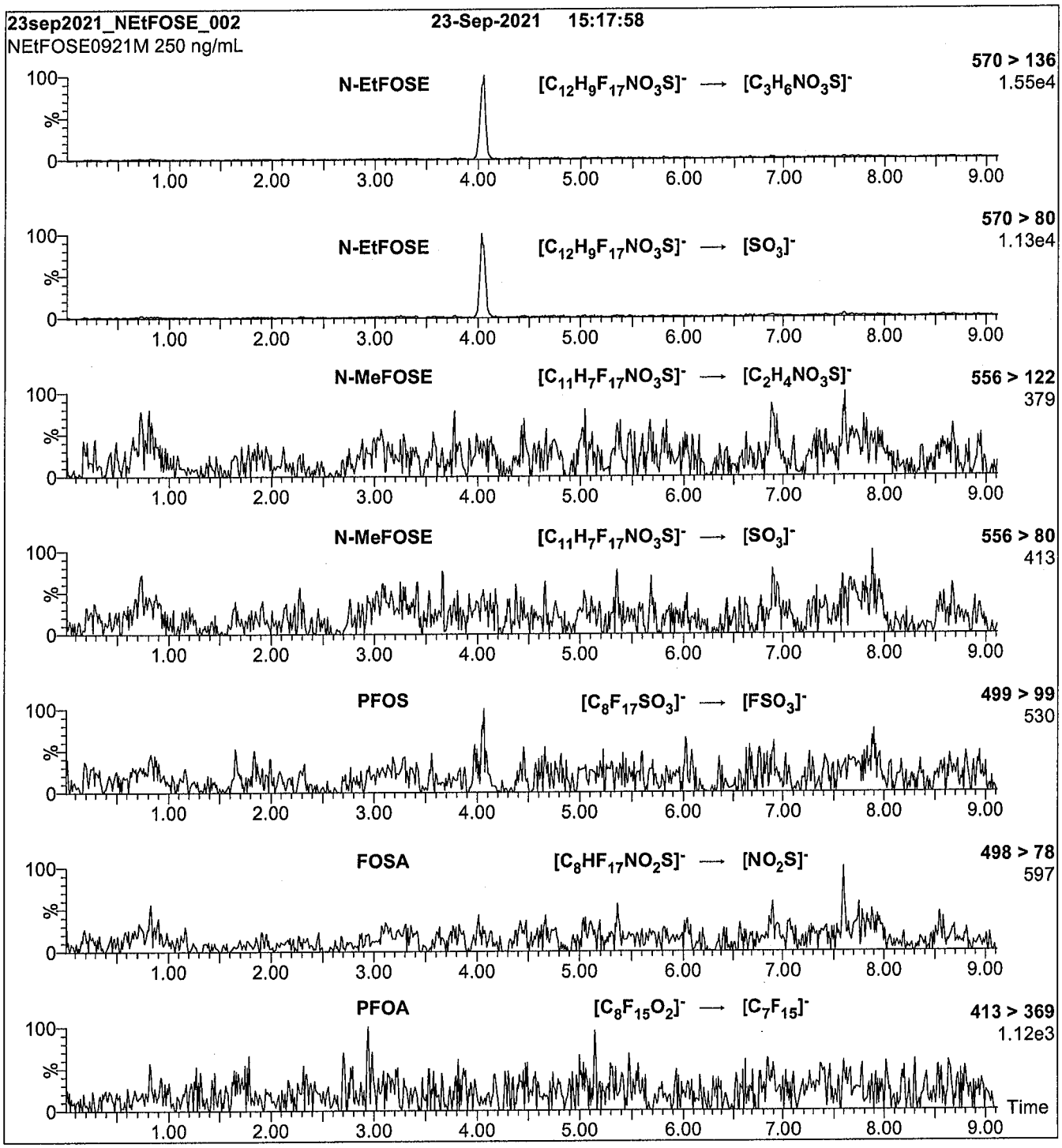
Flow: 300 µL/min

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 µL/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:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

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

Reviewed By

Date

WELLINGTON LABORATORIES

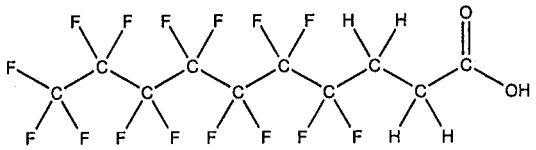
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHpPA
COMPOUND: 3-Perfluoroheptyl propanoic acid

LOT NUMBER: FHpPA1020
22C0311

STRUCTURE:

CAS #: 812-70-4



MOLECULAR FORMULA: $C_{10}H_5F_{15}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/12/2020
EXPIRY DATE: (mm/dd/yyyy) 11/12/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 442.12
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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

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CALA Testing Accreditation No. A1226

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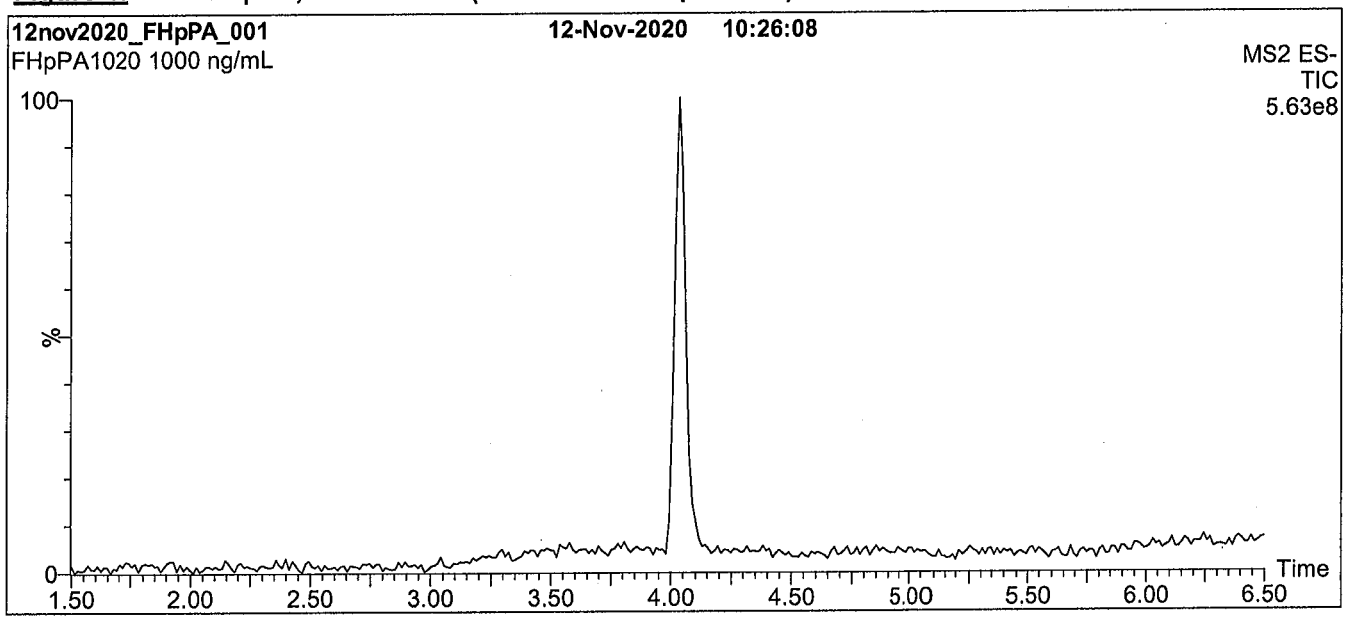
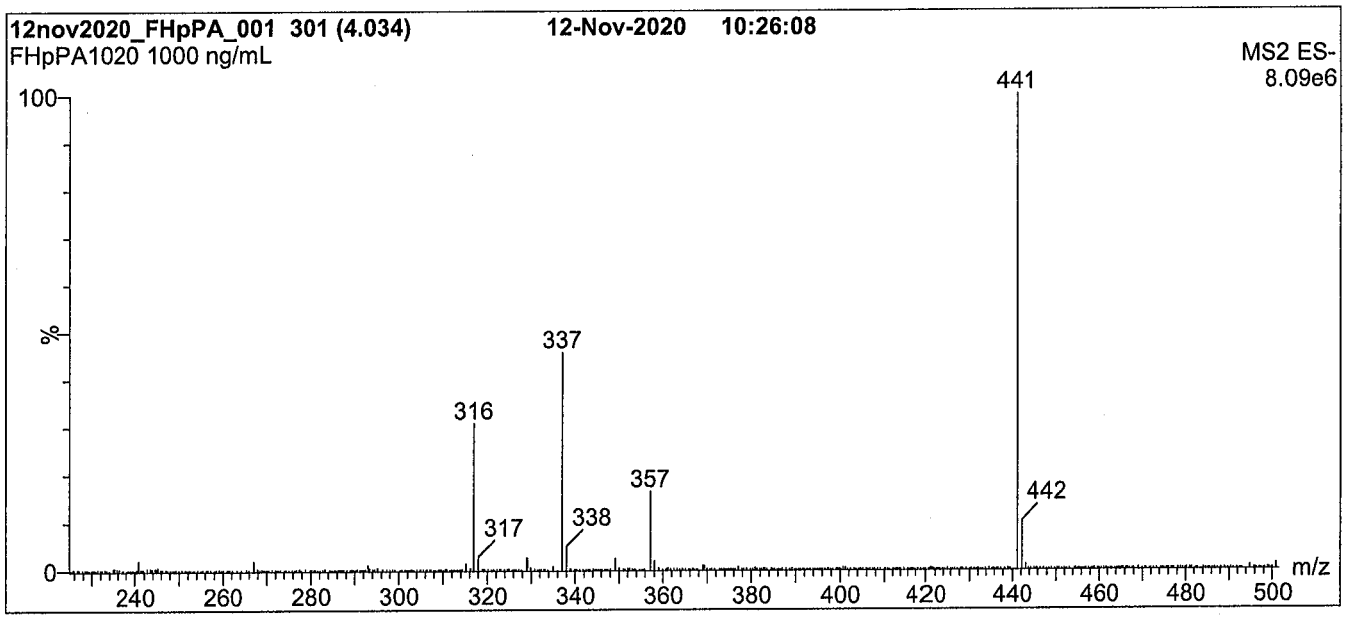
Figure 1: **FHpPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

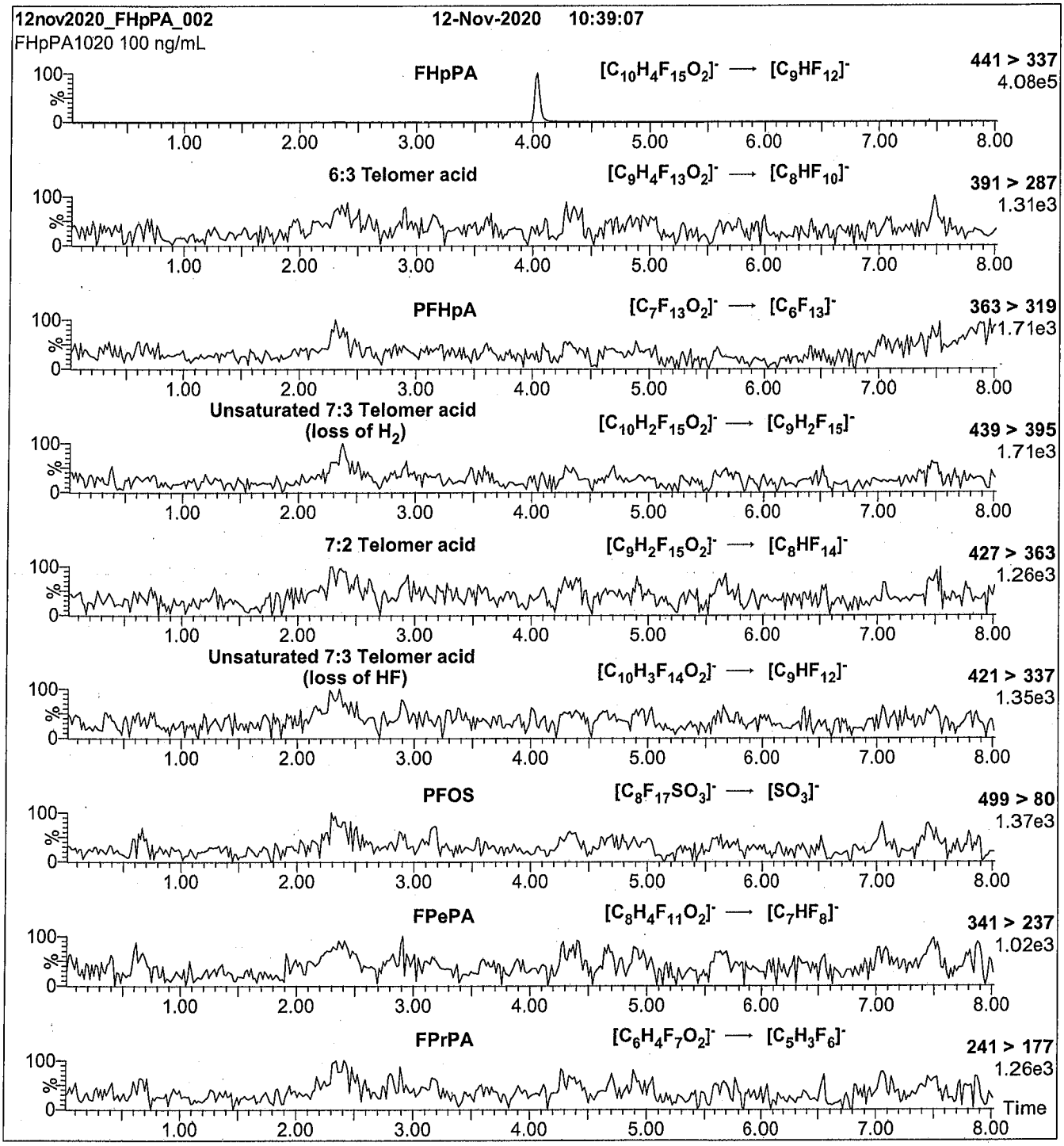
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 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 µL/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#: HHpPA1020)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

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

Reviewed By

Date

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#: HHpPA1020)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

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

Reviewed By

Date

WELLINGTON LABORATORIES

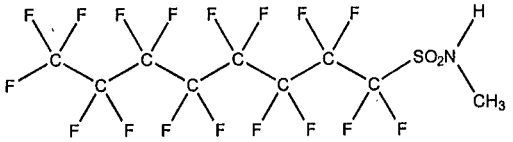
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M
22C0312

STRUCTURE:

CAS #: 31506-32-8



MOLECULAR FORMULA: $C_9H_4F_{17}NO_2S$
CONCENTRATION: 50.0 ± 2.5 µg/mL
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

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

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

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 ±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:

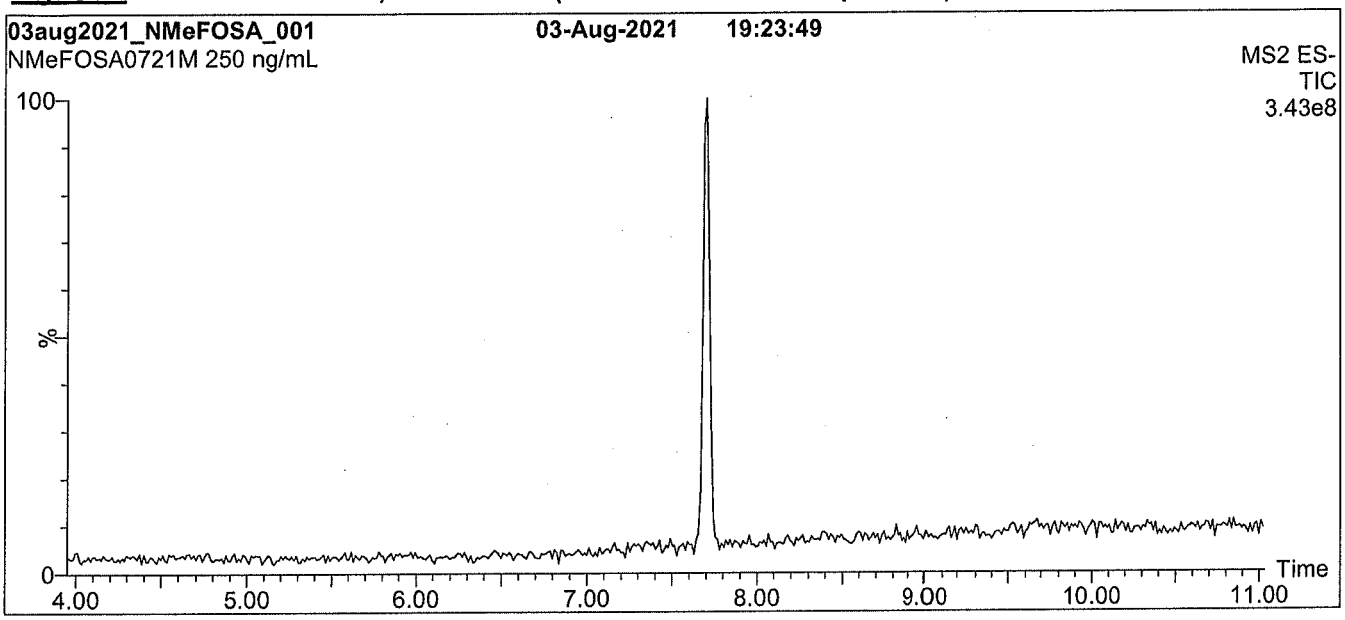
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

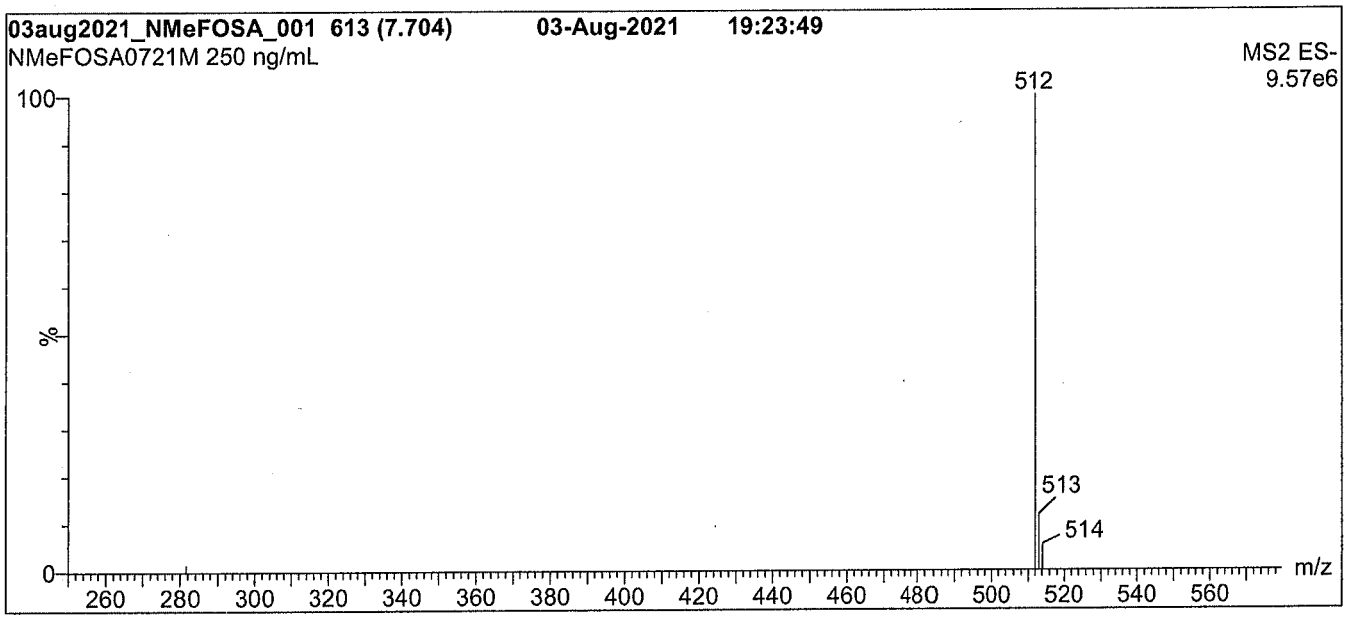
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17034 REFERENCE MATERIAL PRODUCER

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

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





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

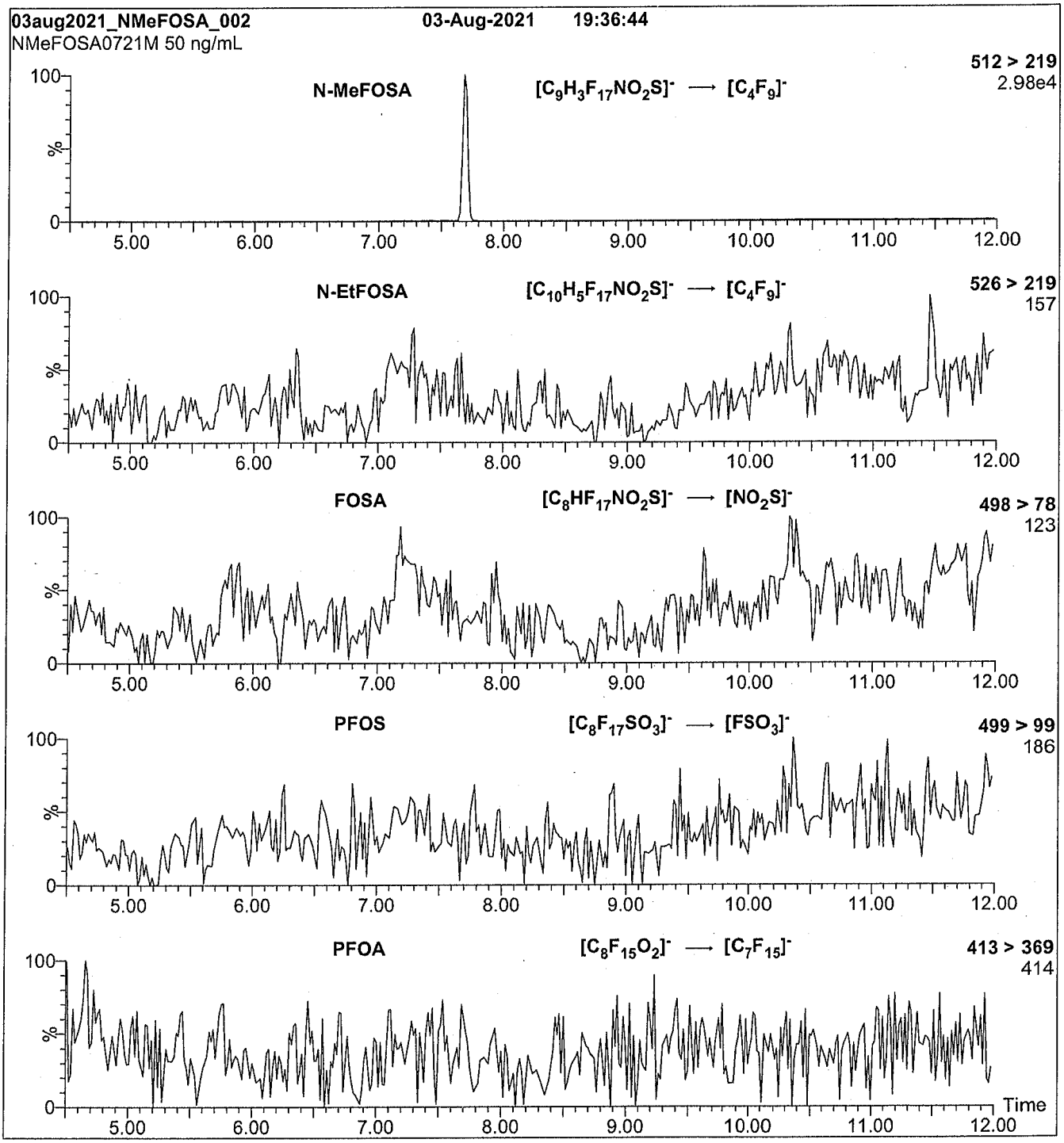
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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 µL/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

Reviewed By

Date

WELLINGTON LABORATORIES

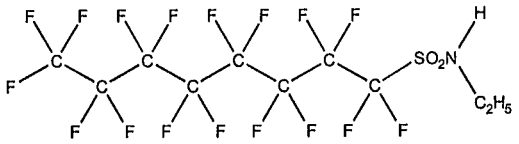
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

LOT NUMBER: NEtFOSA0821M
22C0313

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA: $C_{10}H_6F_{17}NO_2S$
CONCENTRATION: 50.0 ± 2.5 µg/mL
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

MOLECULAR WEIGHT: 527.20
SOLVENT(S): Methanol

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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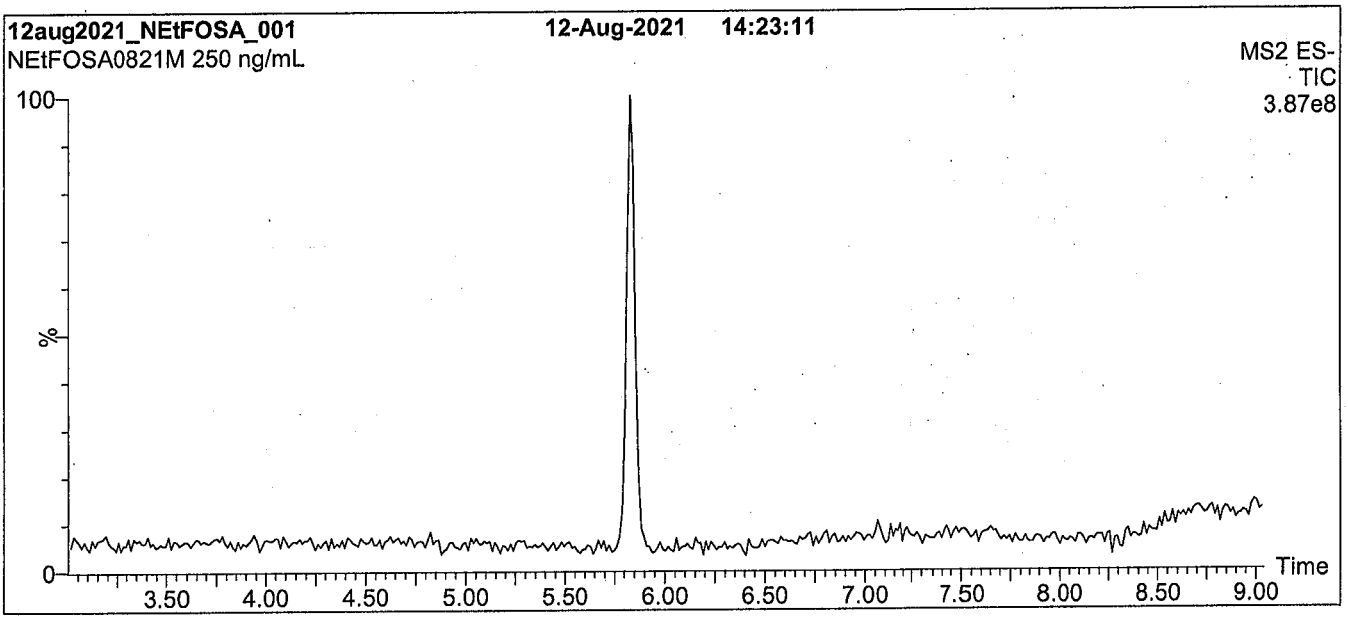
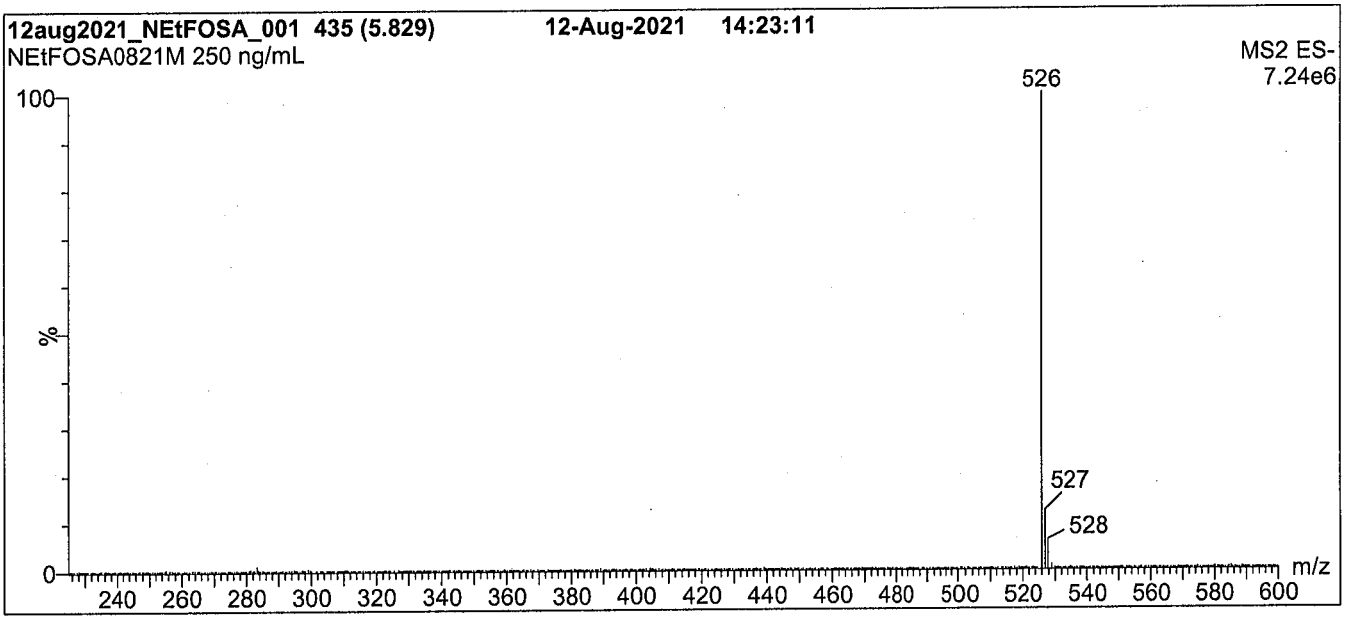
Certified By: _____ **Date:** 08/16/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°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:	PFAS
Vials:	1	Last Edit:	08/17/2022 10:49 by LYA

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

Reviewed By

Date

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

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

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 ±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).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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

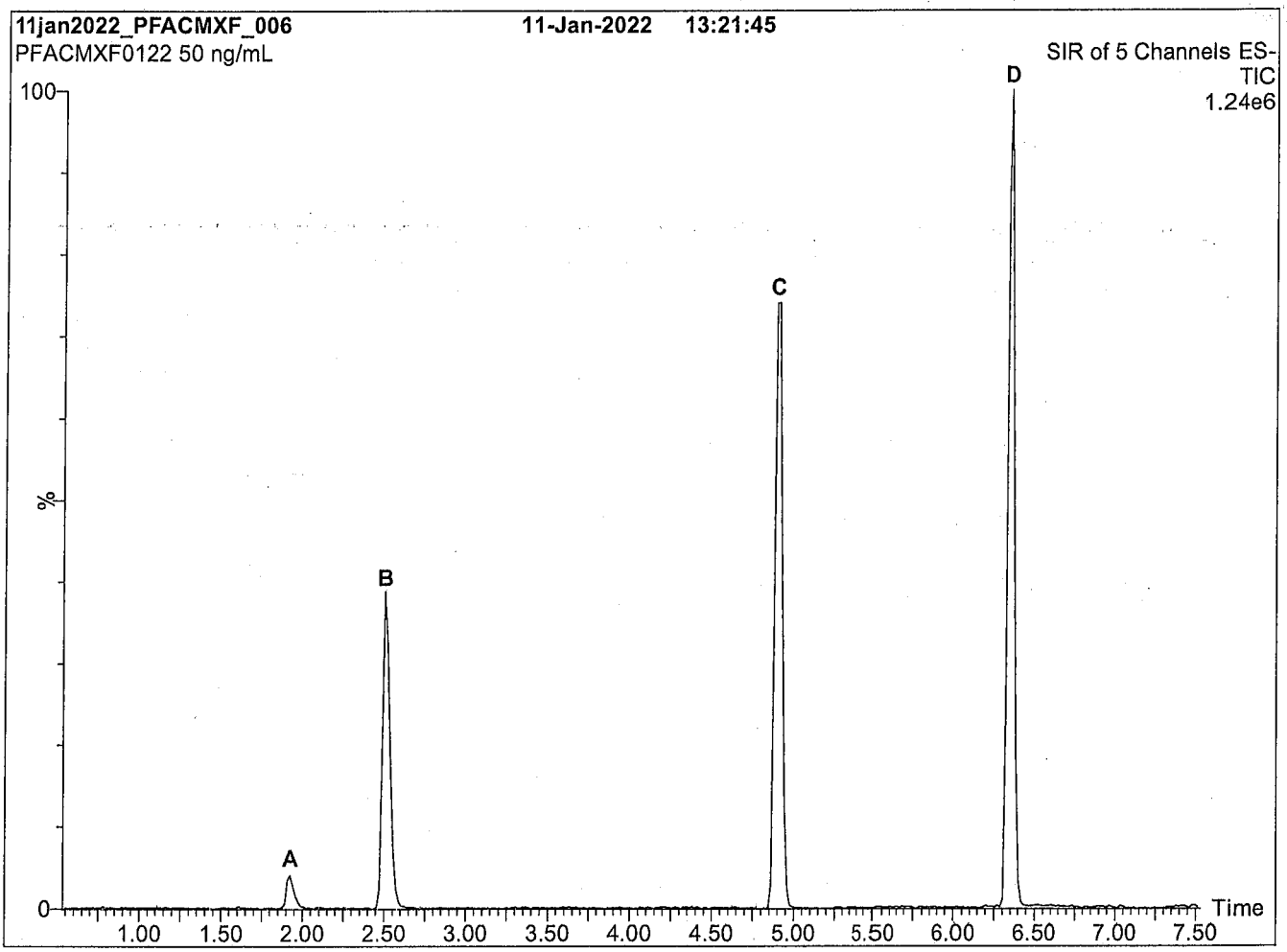
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	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: _____ **Date:** 01/12/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **PFAC-MXF; LC/MS Data (SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

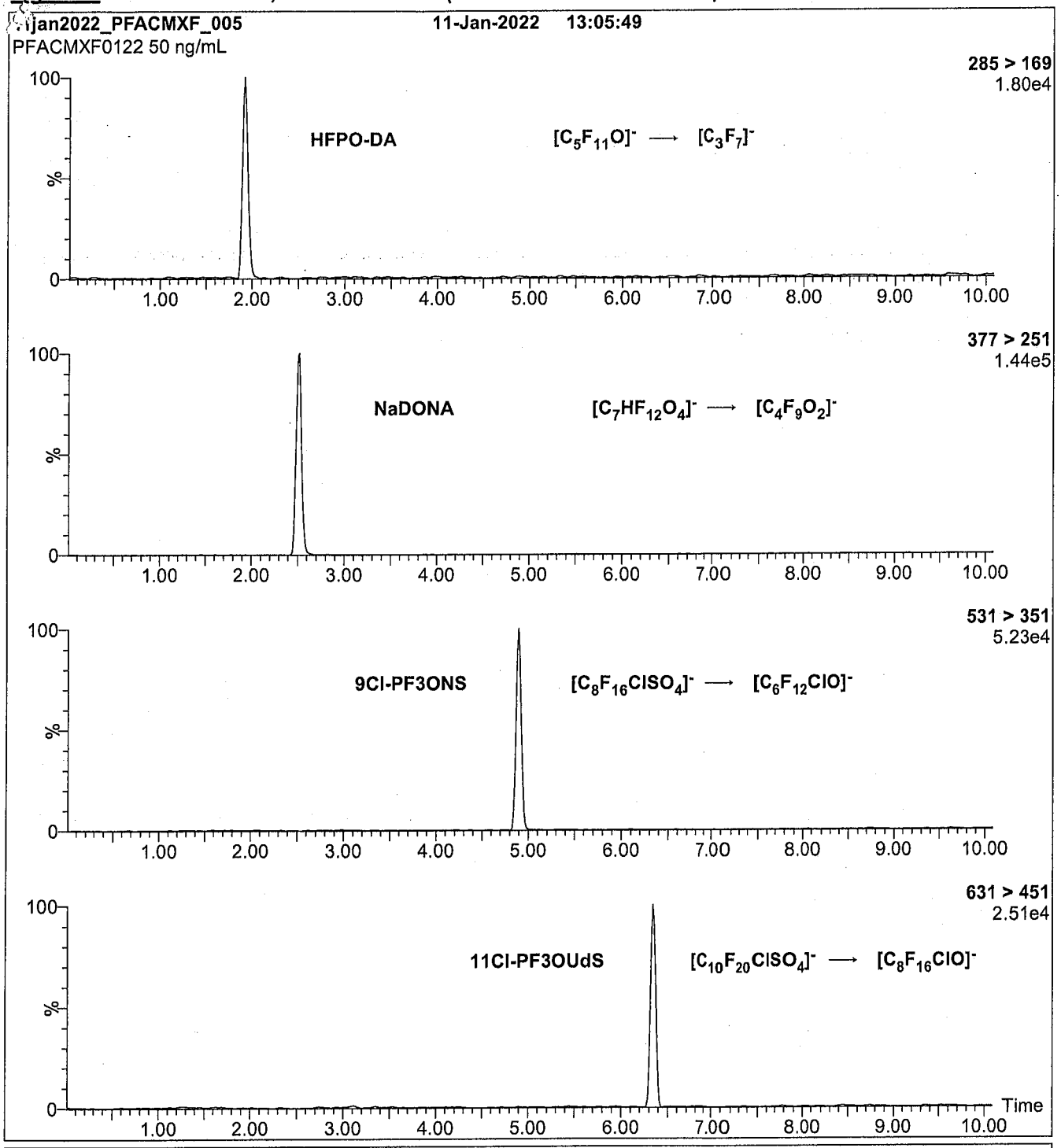
Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (15-74)
Desolvation Temperature (°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 µL/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

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH 22F0059

Native Per- and Poly-fluoroalkyl Substance Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0921
SOLVENT(S):	Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	09/09/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 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.

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

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

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 ±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).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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 (µg/mL, ± 5% in methanol / isopropanol (2%) / water (<1%))**

Compound	Acronym	Concentration* (µg/mL)	Peak Assignment in Figure 1
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: ∑ branched isomers	0.240	17
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	0.775	22
	N-EtFOSAA: ∑ branched isomers	0.225	21

Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: ∑ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: ∑ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanesulfonate	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-perfluorodecanesulfonate	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: _____ **Date:** 09/23/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Table B: **br-NMeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2\underset{\underset{CH_3}{\vert}}{N}CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3\underset{\underset{CF_3}{\vert}}{C}F(CF_2)_2SO_2\underset{\underset{CH_3}{\vert}}{N}CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2\underset{\underset{CF_3}{\vert}}{C}F(CF_2)_3SO_2\underset{\underset{CH_3}{\vert}}{N}CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2\underset{\underset{CF_3}{\vert}}{C}F(CF_2)_4SO_2\underset{\underset{CH_3}{\vert}}{N}CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3\underset{\underset{CF_3}{\vert}}{C}F(CF_2)_5SO_2\underset{\underset{CH_3}{\vert}}{N}CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3\overset{\overset{CF_3}{\vert}}{\underset{\underset{CF_3}{\vert}}{C}}(CF_2)_4SO_2\underset{\underset{CH_3}{\vert}}{N}CH_2CO_2H$	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 ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	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	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)_2CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

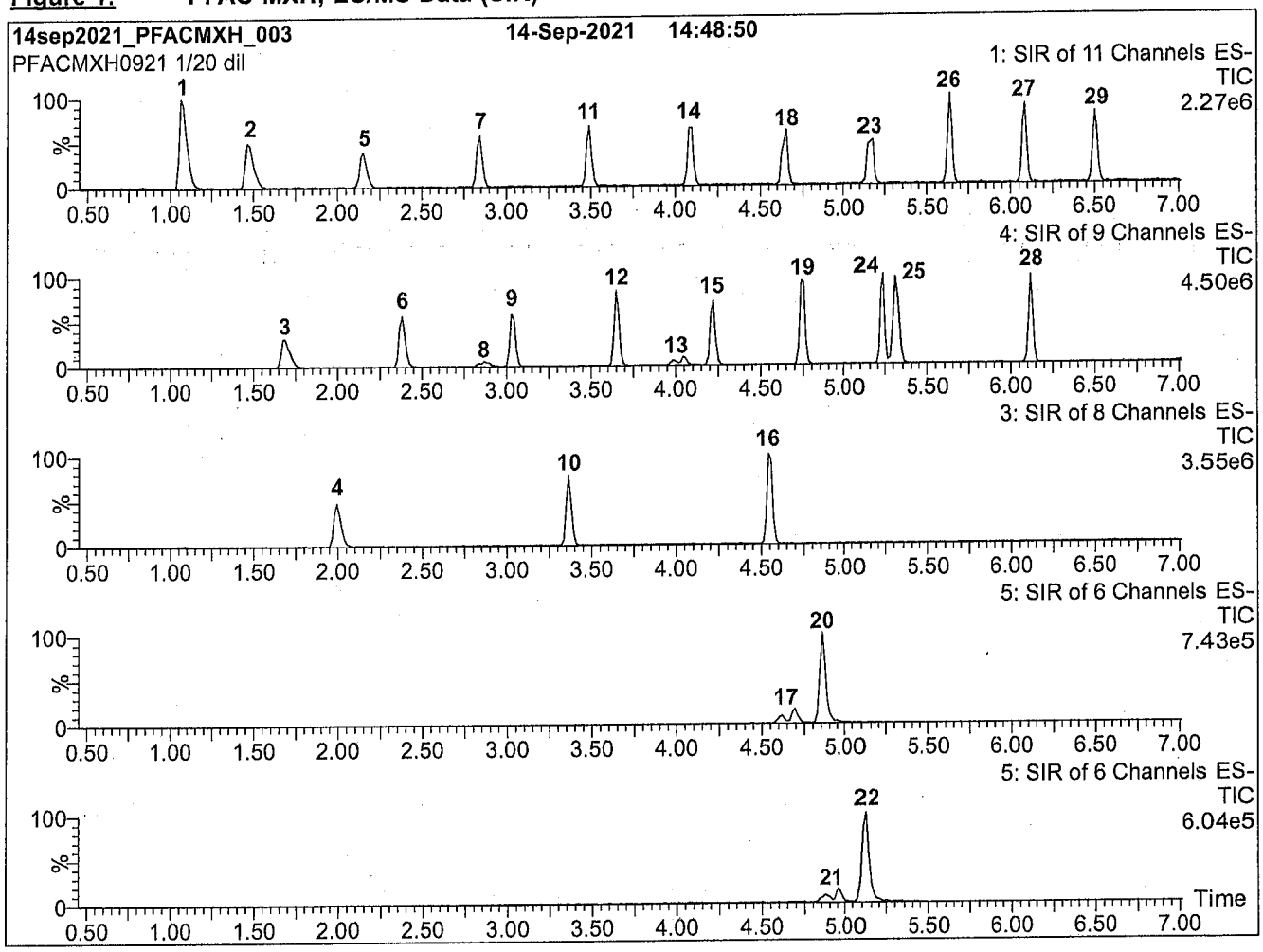
* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

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

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)_2CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)_2CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

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



Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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 µL/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)**

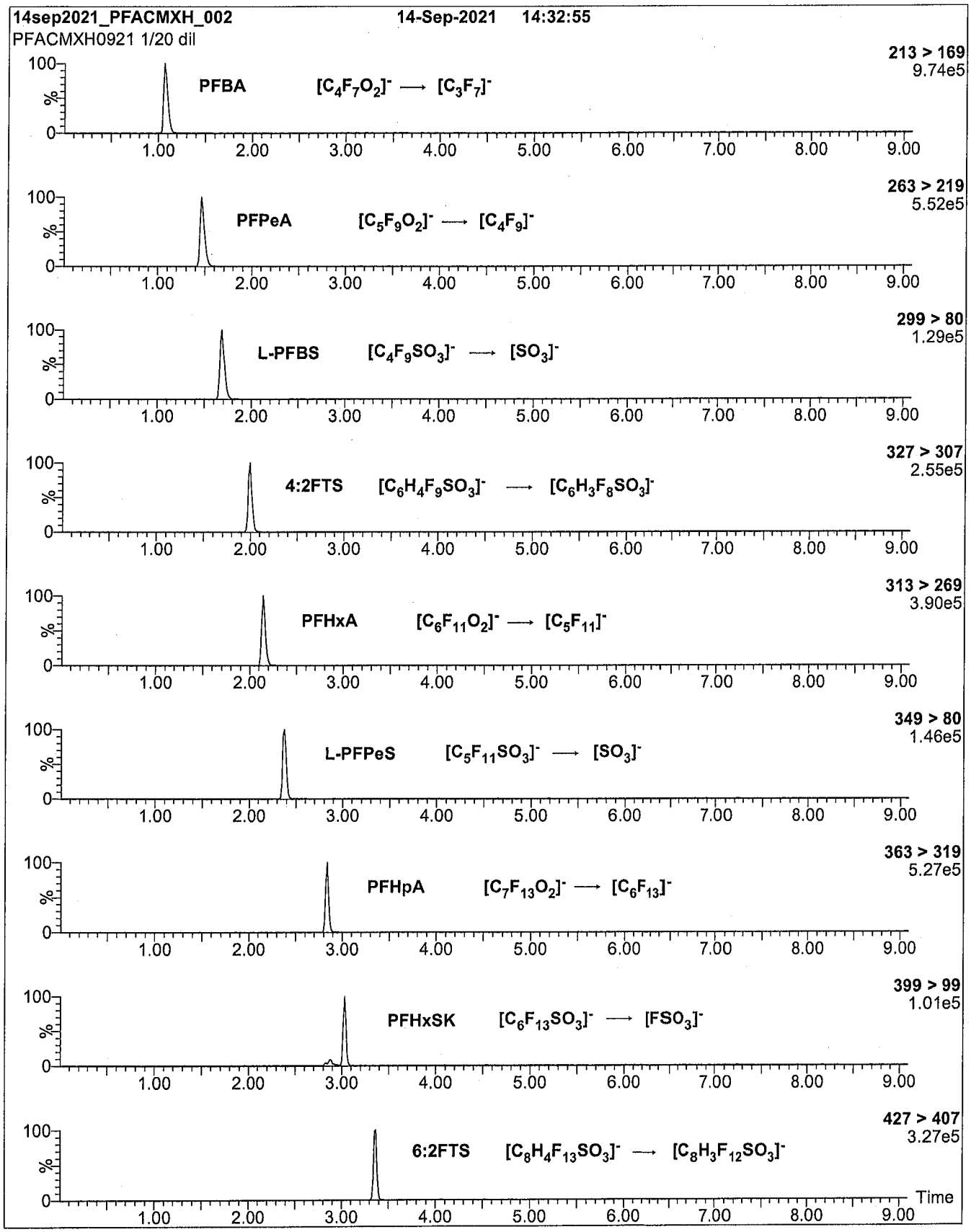


Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**

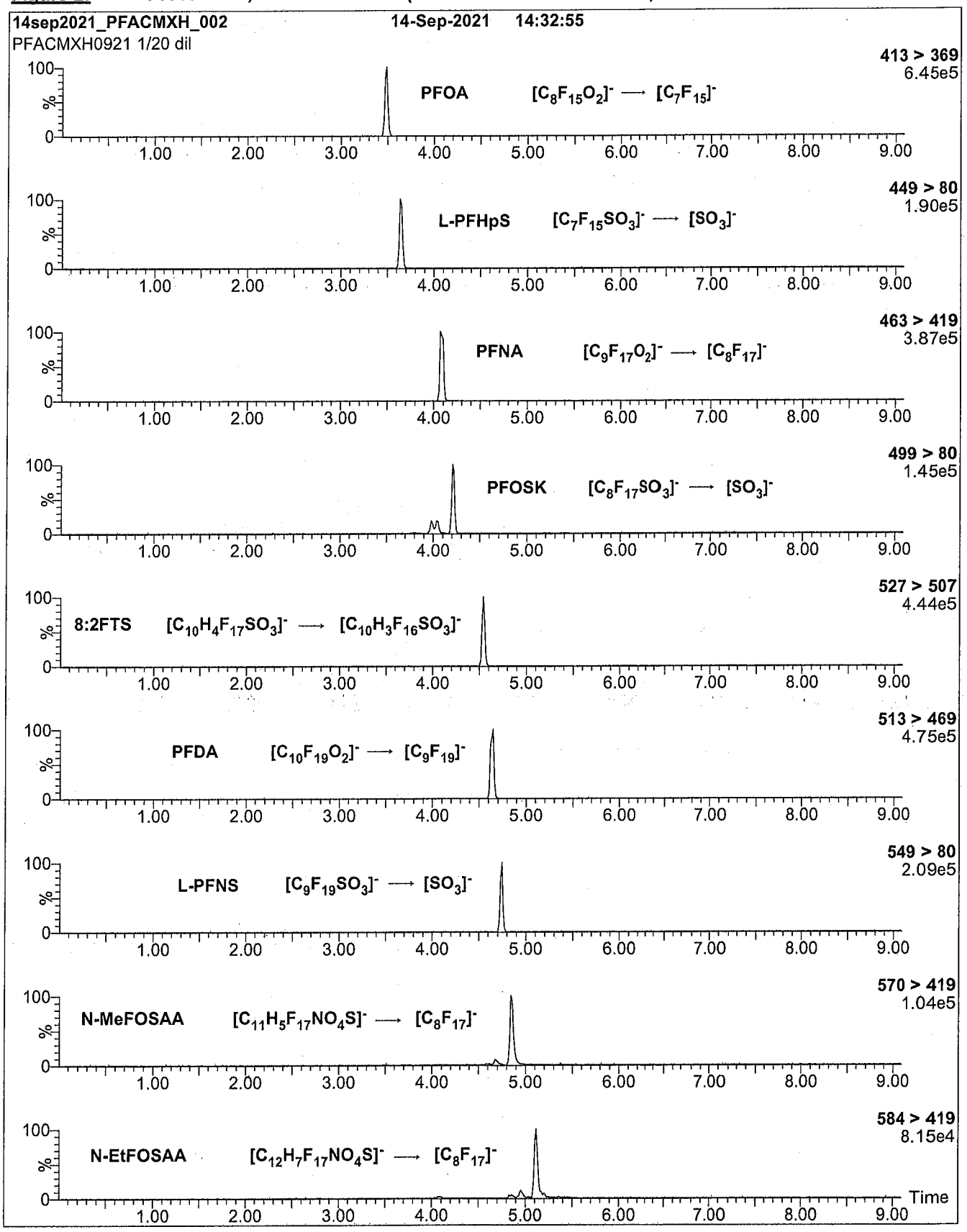
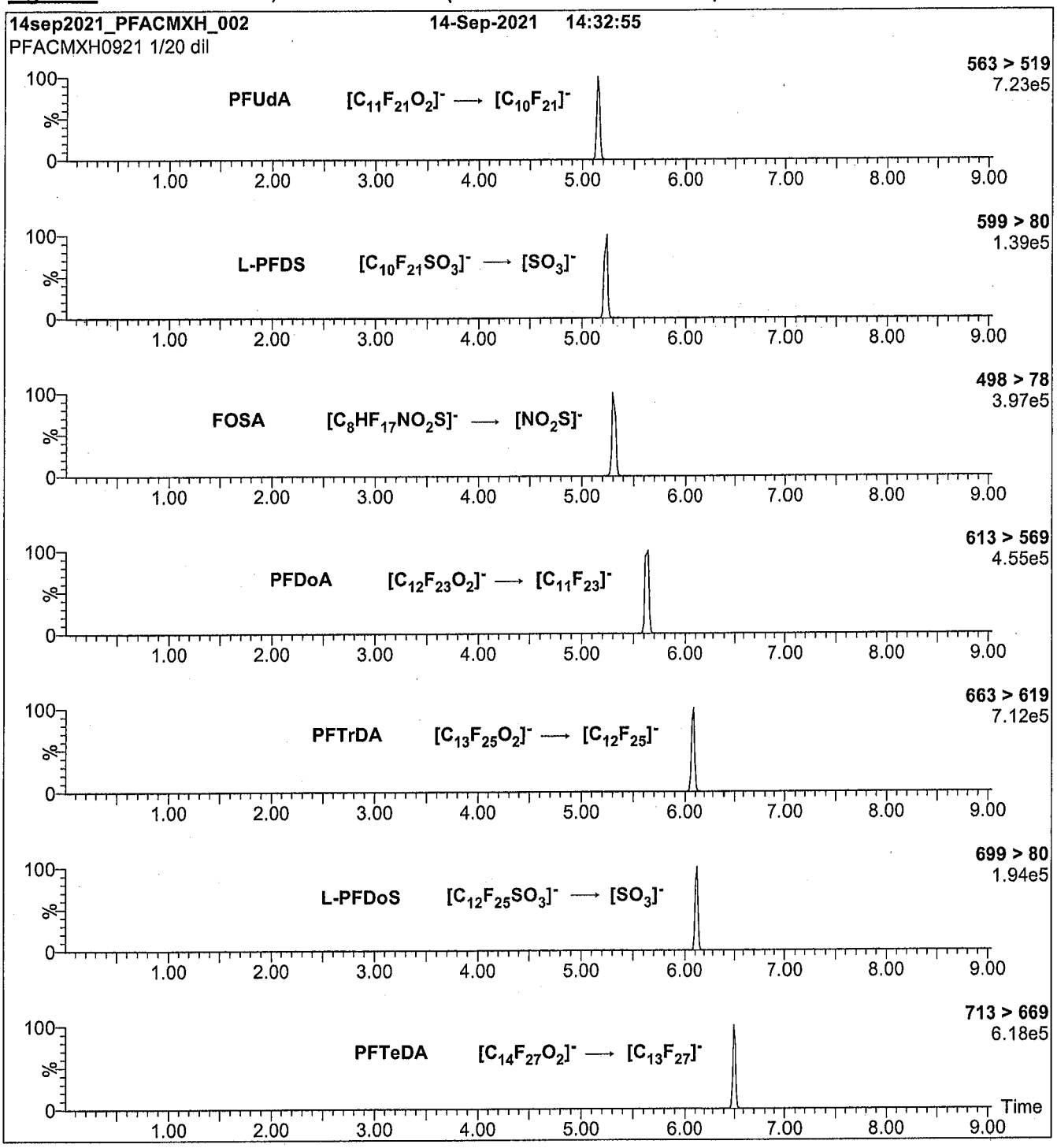


Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

Reviewed By

Date

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

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

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 ±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).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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; ± 5% in methanol/water (<1%))**

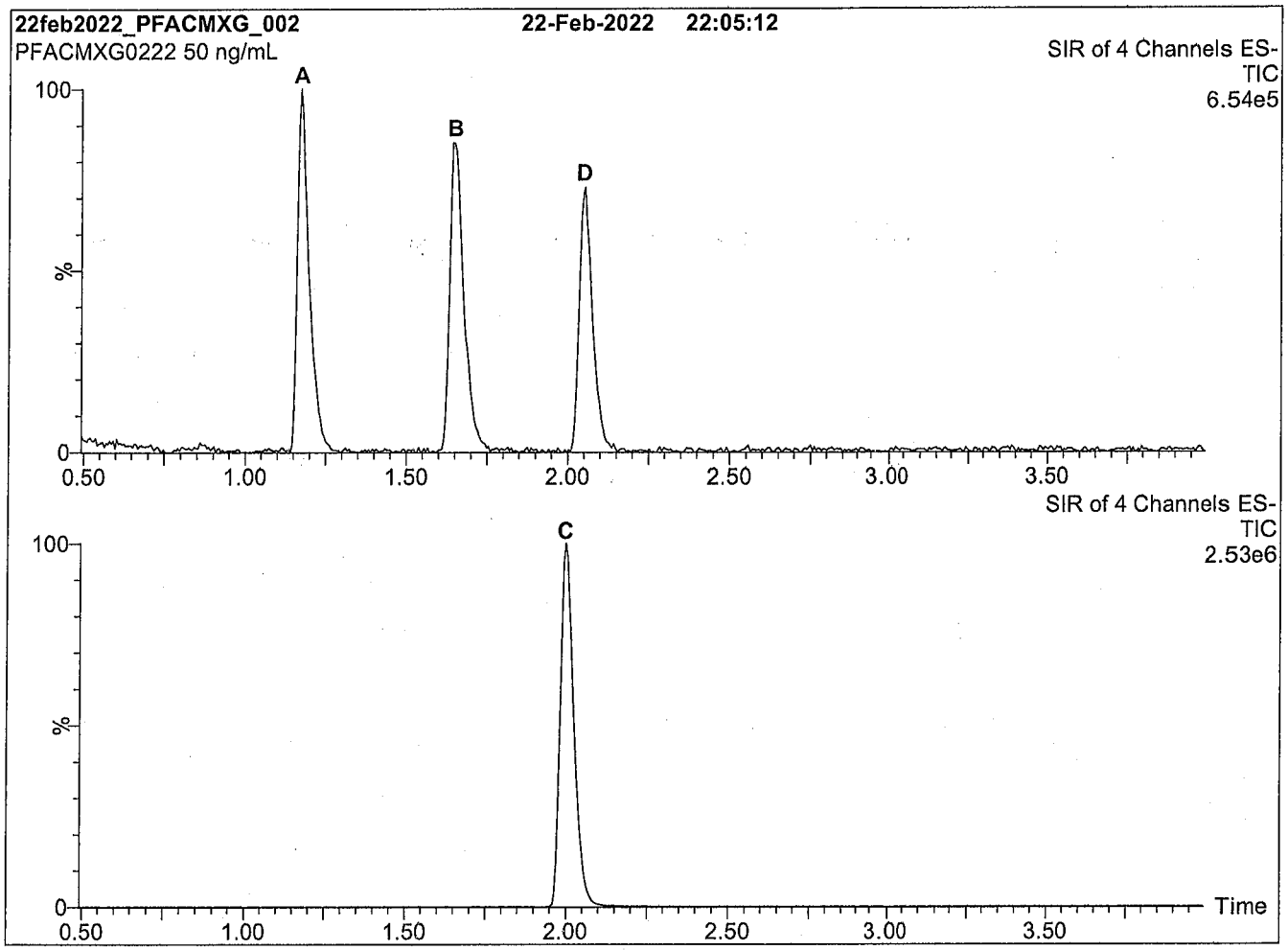
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the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

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 03/03/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **PFAC-MXG; LC/MS Data (SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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

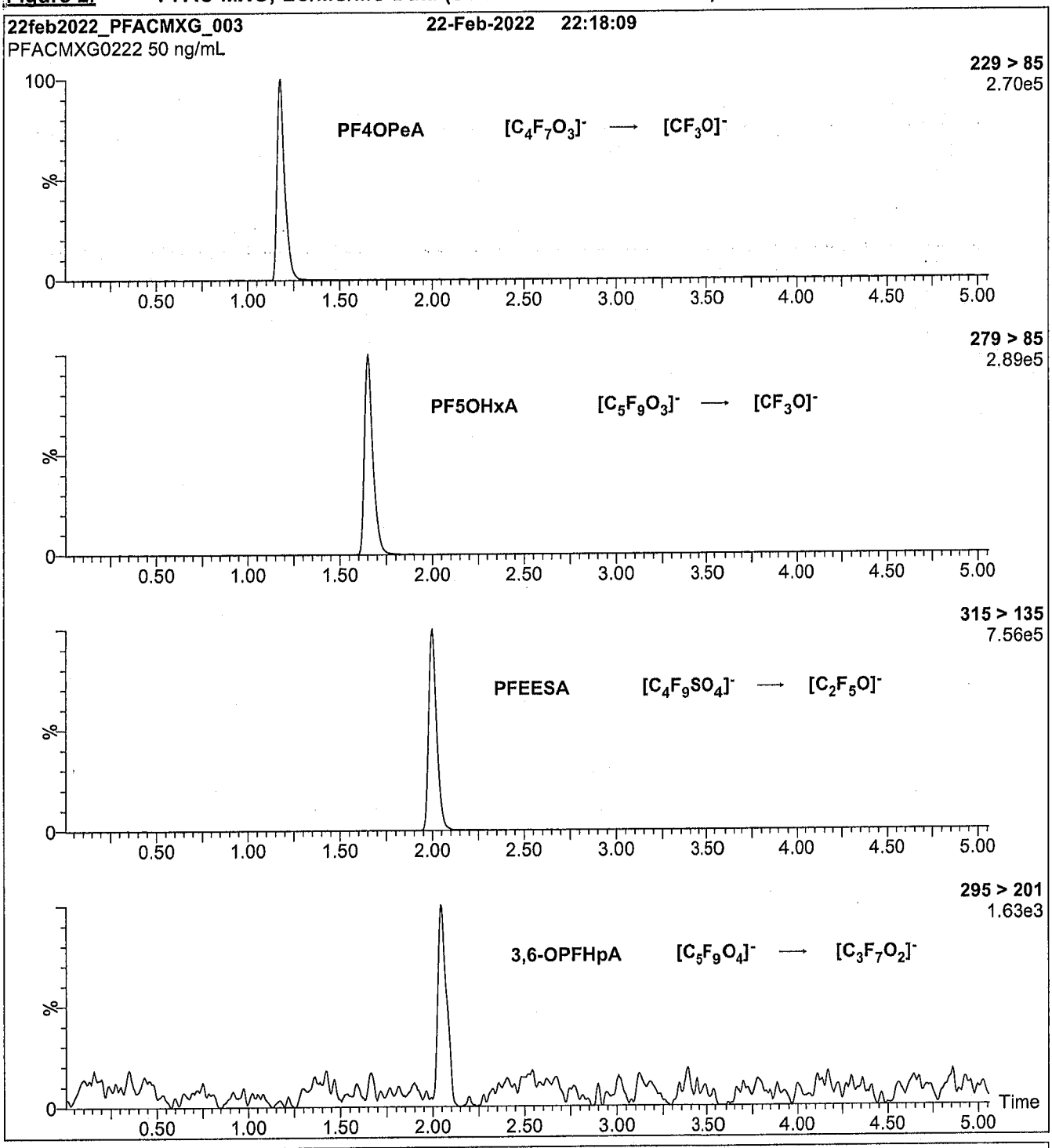
Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = variable (15-35)
Desolvation Temperature (°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 µL/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 NFHDA 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

Reviewed By

Date

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

Reviewed By

Date

Analytical Standard Record

22I0153

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22C0307	PFAS - SAS N-MeFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0308	PFAS - SAS FPrPA 50ug/mL	03/15/2022	Wellington Laboratories	FPrPA0122	02/03/2027	03/15/2022 15:59	by DAG	0.096
22C0309	PFAS - SAS FPePA 50ug/mL	03/15/2022	Wellington Laboratories	FPePA1221	01/05/2027	03/15/2022 15:59	by DAG	0.096
22C0310	PFAS - SAS NEtFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0311	PFAS - SAS FHpPA 50ug/mL	03/15/2022	Wellington Laboratories	HHpPA1020	11/12/2025	03/15/2022 16:00	by DAG	0.096
22C0312	PFAS - SAS NMeFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSA0721M	08/03/2026	03/15/2022 16:00	by DAG	0.096
22C0313	PFAS - SAS NEtFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSA0821M	08/12/2026	08/17/2022 10:49	by LYA	0.096
22F0058	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	09/15/2022 09:32	by DAG	1.2
22F0059	PFAS - MIX MXH 2ug/mL	09/09/2021	Wellington Laboratories	PFACMXH0921	09/14/2026	09/15/2022 09:33	by DAG	1.2
22F0061	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	09/15/2022 09:34	by DAG	1.2

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

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.

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

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
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: _____ **Date:** 03/03/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Analytical Standard Record

22I0342

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

Reviewed By

Date

Analytical Standard Record

22I0343

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

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL

Reviewed By

Date

WELLINGTON LABORATORIES

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; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
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: _____ **Date:** 01/12/2022
B.G. Chittim, General Manager (mm/dd/yyyy)

Analytical Standard Record

22I0343

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

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

APPL ID:22I0334

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 (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 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, ± 5% in methanol/isopropanol (2%)/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4000	1
Perfluoro-n-pentanoic acid	PFPeA	2000	2
Perfluoro-n-hexanoic acid	PFHxA	1000	5
Perfluoro-n-heptanoic acid	PFHpA	1000	7
Perfluoro-n-octanoic acid	PFOA	1000	11
Perfluoro-n-nonanoic acid	PFNA	1000	14
Perfluoro-n-decanoic acid	PFDA	1000	18
Perfluoro-n-undecanoic acid	PFUdA	1000	24
Perfluoro-n-dodecanoic acid	PFDoA	1000	26
Perfluoro-n-tridecanoic acid	PFTrDA	1000	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000	29
Perfluoro-1-octanesulfonamide	FOSA	1000	23
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	760	20
	N-MeFOSAA: ∑ branched isomers	240	17
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	775	22
	N-EtFOSAA: ∑ branched isomers	225	21

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/09/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Analytical Standard Record

22I0344

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

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NEtFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPES		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL

Reviewed By

Date

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

Reviewed By

Date

Analytical Standard Record

22J0448

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22I0153	PFAS - MIX 1633 200ng/mL	09/13/2022	In house	x	01/11/2025	09/15/2022 09:34	by DAG	1

Analytical Standard Record

22J0552

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

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

Reviewed By

Date

Analytical Standard Record

22J0552

Parent Standards used:

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

Analytical Standard Record

22K0039

Description:	PFAS - MIX 1633 10ng/mL	Expires:	05/01/2023
Standard Type:	Analyte Spike	Prepared:	11/02/2022
Solvent:	MeOH	Prepared By:	Andonios Karas
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	11/02/2022 12:56 by ABK

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

Reviewed By

Date

Analytical Standard Record

22K0039

Parent Standards used:

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

Analytical Standard Record

22K0097

Description:	MPFAC-HIF-ES-EIS	Expires:	08/02/2025
Standard Type:	Other	Prepared:	07/20/2022
Solvent:	meoh	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES0822)
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	11/04/2022 10:47 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-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-NETFOSE		D9-NETFOSE	5	ug/mL

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0822
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/20/2022
LAST TESTED: (mm/dd/yyyy)	08/02/2022
EXPIRY DATE: (mm/dd/yyyy)	08/02/2025
RECOMMENDED STORAGE:	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 ^{2}H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^{2}H) perfluorooctane-sulfonamidoethanols, 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 ≥99%. The individual ^{2}H-labelled components all have chemical purities >98% and isotopic 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
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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
Perfluoro-n-($^{13}C_4$)butanoic acid	MPFBA	2000	1
Perfluoro-n-($^{13}C_5$)pentanoic acid	M5PFPeA	1000	2
Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid	M5PFHxA	500	5
Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid	M4PFHpA	500	7
Perfluoro-n-($^{13}C_8$)octanoic acid	M8PFOA	500	10
Perfluoro-n-($^{13}C_9$)nonanoic acid	M9PFNA	250	11
Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid	M6PFDA	250	14
Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid	M7PFUdA	250	17
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	23
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	18
N-methyl-d_3-perfluoro-1-octanesulfonamide	d-N-MeFOSA	500	21
N-ethyl-d_5-perfluoro-1-octanesulfonamide	d-N-EtFOSA	500	24
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	15
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	16
2-(N-methyl-d_3-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d7-N-MeFOSE	5000	20
2-(N-ethyl-d_5-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d9-N-EtFOSE	5000	22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)($^{13}C_3$)propanoic acid	M3HFPO-DA	2000	6

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4-$^{13}C_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3-$^{13}C_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}C_8$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/02/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Analytical Standard Record

22K0502

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

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

Parent Standards used:

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

Reviewed By

Date

Analytical Standard Record

22K0503

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

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

Parent Standards used:

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

Reviewed By

Date

Analytical Standard Record

22L0117

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	06/05/2023
Standard Type:	Surrogate Spike	Prepared:	12/07/2022
Solvent:	MeOH/62244	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	3	Last Edit:	12/07/2022 10:55 by DAG
Comments:	Half the concentration of previous EIS solution used for 1633/B-15. Double the spiking volume from 100 uL to 200 uL		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS	22K0097	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0097	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0097	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0097	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0097	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0097	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0097	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0097	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0097	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0097	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0097	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0097	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0097	13C6-PFDA	0.01	ug/mL
13C7-PFUnA	22K0097	13C7-PFUDA	0.01	ug/mL
13C8-PFOA	22K0097	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0097	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0097	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0097	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0097	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0097	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0097	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0097	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0097	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSE	22K0097	D9-NETFOSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22K0097	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:17	by DAG	0.4

Reviewed By

Date