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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC11787

Sampling Date: 12/07/23



Report to:

AECOM, Inc
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ATTN: Katie Abbott

Total number of pages in report: 33



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Terri McNulty-Patterson 407-425-6700
Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC11787

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC11787-1	12/07/23	09:15	VVOS 12/09/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2312
FC11787-2	12/07/23	09:15	VVOS 12/09/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2312

SAMPLE DELIVERY GROUP CASE NARRATIVE

2

Client: AECOM, INC.

Job No: FC11787

Site: N6274223F0104 RH Fire Suppression System

Report Date: 12/12/2023 1:18:37

On 12/09/2023, 2 Sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC11787 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ

Batch ID: OP552

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FC11787-1DUP, FC11787-2MS were used as the QC samples indicated.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Job Number: FC11787
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 12/07/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC11787-1 AF-RHMW12A-WGN01LF-2312

No hits reported in this sample.

FC11787-2 AF-RHMW12A-WGFD01LF-2312

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2312		
Lab Sample ID:	FC11787-1	Date Sampled:	12/07/23
Matrix:	AQ - Ground Water	Date Received:	12/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q55041.D	1	12/11/23 20:54	AL	12/11/23 08:40	OP552	S4Q806
Run #2							

Run #	Initial Volume	Final Volume
Run #1	555 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.6 U	14	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.2	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.90 U	3.6	0.90	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.63	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.2 U	18	7.2	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.2 U	18	7.2	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.2 U	18	7.2	3.7	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.2	3.6	0.90	ng/l	
4151-50-2	EtFOSA	3.6 U	7.2	3.6	0.90	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2312		
Lab Sample ID:	FC11787-1	Date Sampled:	12/07/23
Matrix:	AQ - Ground Water	Date Received:	12/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.90	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.90	ng/l	
919005-14-4	ADONA	3.6 U	7.2	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.2	1.8	0.90	ng/l	
863090-89-5	PFMBA	3.6 U	7.2	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.2	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.2	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.2	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.2	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.0 U	18	9.0	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	90	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	90	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		20-150%
	13C5-PFPeA	79%		20-150%
	13C5-PFHxA	79%		20-150%
	13C4-PFHpA	79%		20-150%
	13C8-PFOA	79%		20-150%
	13C9-PFNA	77%		20-150%
	13C6-PFDA	74%		20-150%
	13C7-PFUnDA	72%		20-150%
	13C2-PFDoDA	63%		20-150%
	13C2-PFTeDA	56%		20-150%
	13C3-PFBS	79%		20-150%
	13C3-PFHxS	84%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2312	
Lab Sample ID:	FC11787-1	Date Sampled: 12/07/23
Matrix:	AQ - Ground Water	Date Received: 12/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	74%		20-150%
	13C8-FOSA	69%		20-150%
	d3-MeFOSA	67%		20-150%
	d5-EtFOSA	73%		20-150%
	d3-MeFOSAA	68%		20-150%
	d5-EtFOSAA	64%		20-150%
	d7-MeFOSE	55%		20-150%
	d9-EtFOSE	68%		20-150%
	13C2-4:2FTS	70%		20-180%
	13C2-6:2FTS	77%		20-180%
	13C2-8:2FTS	69%		20-180%
	13C3-HFPO-DA	80%		20-150%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2312		
Lab Sample ID:	FC11787-2	Date Sampled:	12/07/23
Matrix:	AQ - Ground Water	Date Received:	12/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q55043.D	1	12/11/23 21:23	AL	12/11/23 08:40	OP552	S4Q806
Run #2							

Run #	Initial Volume	Final Volume
Run #1	545 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.86	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.7	1.8	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.7	1.8	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.92 U	3.7	0.92	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.7	1.8	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.7	1.8	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.7	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.7	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.7	1.8	0.77	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.7	1.8	0.46	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.7	1.8	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.7	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.7	1.8	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.7	1.8	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.7	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.7	1.8	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.8	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.7	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.7 U	7.3	3.7	0.92	ng/l	
4151-50-2	EtFOSA	3.7 U	7.3	3.7	0.92	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2312		
Lab Sample ID:	FC11787-2	Date Sampled:	12/07/23
Matrix:	AQ - Ground Water	Date Received:	12/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.92	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	37	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	37	18	6.8	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.7	1.8	0.92	ng/l	
919005-14-4	ADONA	3.7 U	7.3	3.7	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.92	ng/l	
863090-89-5	PFMBA	3.7 U	7.3	3.7	1.0	ng/l	
151772-58-6	NFDHA	3.7 U	7.3	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.3	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.3	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.2 U	18	9.2	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	92	18	8.0	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	92	18	7.2	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	65%		20-150%
	13C5-PFPeA	82%		20-150%
	13C5-PFHxA	81%		20-150%
	13C4-PFHpA	83%		20-150%
	13C8-PFOA	79%		20-150%
	13C9-PFNA	80%		20-150%
	13C6-PFDA	78%		20-150%
	13C7-PFUnDA	83%		20-150%
	13C2-PFDoDA	70%		20-150%
	13C2-PFTeDA	60%		20-150%
	13C3-PFBS	78%		20-150%
	13C3-PFHxS	88%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2312	
Lab Sample ID:	FC11787-2	Date Sampled: 12/07/23
Matrix:	AQ - Ground Water	Date Received: 12/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	76%		20-150%
	13C8-FOSA	67%		20-150%
	d3-MeFOSA	65%		20-150%
	d5-EtFOSA	66%		20-150%
	d3-MeFOSAA	73%		20-150%
	d5-EtFOSAA	73%		20-150%
	d7-MeFOSE	49%		20-150%
	d9-EtFOSE	63%		20-150%
	13C2-4:2FTS	73%		20-180%
	13C2-6:2FTS	80%		20-180%
	13C2-8:2FTS	71%		20-180%
	13C3-HFPO-DA	83%		20-150%

U = Not detected **LOD = Limit of Detection** **J = Indicates an estimated value**
LOQ = Limit of Quantitation **DL = Detection Limit** **B = Indicates analyte found in associated method blank**
E = Indicates value exceeds calibration range **N = Indicates presumptive evidence of a compound**

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

COC #: 2312AFSG05

SGS - ORLANDO JOB # :

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FC11787

SGS - ORLANDO Quote #

SKIPP #

Client / Reporting Information		Project Information				Analytical Information												Matrix Codes
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System				<div style="float: right; text-align: center;"> </div>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600		Street																
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii																
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 23F0104 - 60697810																
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #																
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order # 151253				PFAS EPA Draft 163												
Sampler(s) Name(s) (Printed) Sampler 1: <i>J. J. ...</i> Sampler 2: <i>J. J. ...</i>																		
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION												LAB USE ONLY	
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	NOI	NICH	PN03	RES04	MNH-ZINC	D WATER	MECH			
1	AF-RHMMW12A-WGN01LF-2312	12/7/23	0915	JV	GW	3		X									X	
2	AF-RHMMW12A-WGFD01LF-2312	12/7/23	0915	JV	GW	3		X									X	
														INITIAL ASSESSMENT	ZB			
														LABEL VERIFICATION	ZD			
Turnaround Time (Business days)				Data Deliverable Information								Comments / Remarks						
10 Day (Business)		Approved By: / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S								EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW UNITED AWB 01697013596						
7 Day																		
5 Day																		
3 Day RUSH																		
2 Day RUSH																		
1 Day RUSH																		
Other																		
Rush T/A Data Available VIA Email or Lablink																		
Sample Custody must be documented below each time samples change possession, including courier delivery.																		
Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:			
1 <i>J. J. ...</i>	12/7/23	2 <i>Michaela Norris/Aecom</i>	12/7/23	3 <i>Michaela Norris/Aecom</i>	12/7/23	4 <i>uc</i>	12/7/23	5 <i>uc</i>	12/7/23	6 <i>J. J. ...</i>	12/9/23	7 <i>J. J. ...</i>	12/9/23	8 <i>uc</i>	12/9/23			
Lab Use Only: Cooler Temperature (s) Celsius (corrected): <i>4.24 R1</i>																		

PFAS_COCs_ALL_12042023.xls Rev 031318

FC11787: Chain of Custody

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5.1
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SGS - Orlando Sample Receipt Summary

Job Number: fc11787

Client: AECOM

Project: N6274223F0104 RH FIRE SUPPRESSION S

Date / Time Received: 12/9/2023 8:00:00 AM

Delivery Method: NITED CARGO/AIRSPAC

Airbill #'s: UNITED AWB: 016-97613596

Cooler Temps (Raw Measured) °C: Cooler 2: (4.2);

Cooler Temps (Corrected) °C: Cooler 2: (4.6);

Cooler Information

Y or N

- 1. Custody Seals Present:
- 2. Custody Seals Intact:
- 3. Temp criteria achieved:
- 4. Cooler temp verification: IR Gun
- 5. Cooler media: Ice (Bag)

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler:
- 2. Trip Blank listed on COC:

W or S N/A

- 3. Type of TB Received

Sample Information

Y or N N/A

- 1. Sample labels present on bottles:
- 2. Samples presented properly:
- 3. Sufficient volume/containers recv'd for analysis:
- 4. Condition of sample: Intact
- 5. Sample recv'd within HT:
- 6. Dates/Times/IDs on COC match sample label:
- 7. VOCs have headspace:
- 8. Bottles received for unspecified tests:
- 9. Compositing instructions clear:
- 10. Voa Soil Kits/Jars received past 48hrs?:
- 11. % Solids Jar Received?:
- 12. Residual Chlorine Present?:

Misc Information

Number of Encores: 25 Gram 5 Gram

Number of Lab Filtered Metals:

Test Strip Lot #s: pH 0-3: 226422

pH 10-12: _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot # _____

Comments

Sample Receipt Summary 112723 EK Technician: SHAYLAP

Date: 12/9/2023 11:00:12 AM

Reviewer: _____ Date: _____

FC11787: Chain of Custody

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5.1
5

QC Evaluation: DOD QSM5.x Limits

Job Number: FC11787
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 12/07/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC11787

5.2
5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q806-IBLK	4Q55025.D	1	12/11/23	AL	n/a	n/a	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	0.0015	0.0080	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0023	0.0080	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	0.0053	0.040	0.0044	ug/l	J
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q806-IBLK	4Q55025.D	1	12/11/23	AL	n/a	n/a	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	98% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	101% 20-150%
	13C9-PFNA	99% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	109% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	96% 20-150%
	d3-MeFOSAA	96% 20-150%
	d5-EtFOSAA	100% 20-150%
	13C2-4:2FTS	101% 20-180%
	13C2-6:2FTS	105% 20-180%
	13C2-8:2FTS	100% 20-180%

Continuing Calibration Blank

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q806-ICCB	4Q55037.D	1	12/11/23	AL	n/a	n/a	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q806-ICCB	4Q55037.D	1	12/11/23	AL	n/a	n/a	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	103% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	96% 20-150%
	13C9-PFNA	99% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	109% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	94% 20-150%
	13C8-FOSA	94% 20-150%
	d3-MeFOSAA	97% 20-150%
	d5-EtFOSAA	96% 20-150%
	13C2-4:2FTS	107% 20-180%
	13C2-6:2FTS	97% 20-180%
	13C2-8:2FTS	100% 20-180%

Continuing Calibration Blank

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q806-ICCB	4Q55047.D	1	12/11/23	AL	n/a	n/a	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q806-ICCB	4Q55047.D	1	12/11/23	AL	n/a	n/a	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	98% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	101% 20-150%
	13C6-PFDA	105% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	95% 20-150%
	13C8-FOSA	95% 20-150%
	d3-MeFOSAA	96% 20-150%
	d5-EtFOSAA	92% 20-150%
	13C2-4:2FTS	98% 20-180%
	13C2-6:2FTS	96% 20-180%
	13C2-8:2FTS	95% 20-180%

Method Blank Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-MB	4Q55040.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-MB	4Q55040.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	128% 20-150%
	13C5-PFPeA	131% 20-150%
	13C5-PFHxA	126% 20-150%
	13C4-PFHpA	132% 20-150%
	13C8-PFOA	123% 20-150%
	13C9-PFNA	122% 20-150%
	13C6-PFDA	138% 20-150%
	13C7-PFUnDA	134% 20-150%
	13C2-PFDoDA	116% 20-150%
	13C2-PFTeDA	105% 20-150%
	13C3-PFBS	117% 20-150%
	13C3-PFHxS	131% 20-150%
	13C8-PFOS	113% 20-150%
	13C8-FOSA	98% 20-150%
	d3-MeFOSA	89% 20-150%
	d5-EtFOSA	105% 20-150%
	d3-MeFOSAA	108% 20-150%
	d5-EtFOSAA	110% 20-150%
	d7-MeFOSE	77% 20-150%
	d9-EtFOSE	99% 20-150%
	13C2-4:2FTS	108% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	119% 20-180%
	13C3-HFPO-DA	128% 20-150%

6.1.4
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Blank Spike Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-LLBS	4Q55039.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0331	110	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0159	106	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0083	111	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0080	107	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0077	103	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0074	99	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0087	116	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0083	111	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0088	117	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0087	116	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0079	105	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0076	114	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0075	106	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0073	106	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0074	104	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0078	112	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0075	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0077	106	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0068	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0293	104	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0294	103	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0360	125	40-150
754-91-6	PFOSA	0.0075	0.0082	109	40-150
31506-32-8	MeFOSA	0.015	0.0138	92	40-150
4151-50-2	EtFOSA	0.015	0.0146	97	40-150
2355-31-9	MeFOSAA	0.0075	0.0091	121	40-150
2991-50-6	EtFOSAA	0.0075	0.0078	104	40-150
24448-09-7	MeFOSE	0.0375	0.0382	102	40-150
1691-99-2	EtFOSE	0.0375	0.0355	95	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0160	107	40-150
919005-14-4	ADONA	0.0142	0.0162	114	40-150
377-73-1	PFMPA	0.015	0.0160	107	40-150
863090-89-5	PFMBA	0.015	0.0151	101	40-150
151772-58-6	NFDHA	0.015	0.0172	115	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0163	116	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0153	108	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-LLBS	4Q55039.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0148	111	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0325	87	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.191	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.201	107	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	82%	20-150%
	13C5-PFPeA	80%	20-150%
	13C5-PFHxA	77%	20-150%
	13C4-PFHpA	82%	20-150%
	13C8-PFOA	79%	20-150%
	13C9-PFNA	81%	20-150%
	13C6-PFDA	78%	20-150%
	13C7-PFUnDA	78%	20-150%
	13C2-PFDoDA	73%	20-150%
	13C2-PFTeDA	68%	20-150%
	13C3-PFBS	80%	20-150%
	13C3-PFHxS	84%	20-150%
	13C8-PFOS	76%	20-150%
	13C8-FOSA	54%	20-150%
	d3-MeFOSA	53%	20-150%
	d5-EtFOSA	58%	20-150%
	d3-MeFOSAA	70%	20-150%
	d5-EtFOSAA	73%	20-150%
	d7-MeFOSE	43%	20-150%
	d9-EtFOSE	55%	20-150%
	13C2-4:2FTS	79%	20-180%
	13C2-6:2FTS	77%	20-180%
	13C2-8:2FTS	67%	20-180%
	13C3-HFPO-DA	77%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-B5	4Q55038.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.109	109	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0529	106	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0268	107	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0274	110	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0261	104	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0262	105	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0269	108	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0279	112	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0268	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0253	101	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0271	108	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0247	111	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0234	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0244	107	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0258	108	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0255	110	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0287	119	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0250	104	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0226	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0995	106	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.102	107	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.111	116	40-150
754-91-6	PFOSA	0.025	0.0263	105	40-150
31506-32-8	MeFOSA	0.05	0.0498	100	40-150
4151-50-2	EtFOSA	0.05	0.0466	93	40-150
2355-31-9	MeFOSAA	0.025	0.0266	106	40-150
2991-50-6	EtFOSAA	0.025	0.0273	109	40-150
24448-09-7	MeFOSE	0.125	0.119	95	40-150
1691-99-2	EtFOSE	0.125	0.118	94	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0536	107	40-150
919005-14-4	ADONA	0.0473	0.0543	115	40-150
377-73-1	PFMPA	0.05	0.0513	103	40-150
863090-89-5	PFMBA	0.05	0.0494	99	40-150
151772-58-6	NFDHA	0.05	0.0574	115	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0528	113	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0491	104	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-BS	4Q55038.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0465	104	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.126	101	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.650	104	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.665	106	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	92%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	97%	20-150%
	13C4-PFHpA	98%	20-150%
	13C8-PFOA	96%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	99%	20-150%
	13C7-PFUnDA	102%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	82%	20-150%
	13C3-PFBS	96%	20-150%
	13C3-PFHxS	108%	20-150%
	13C8-PFOS	90%	20-150%
	13C8-FOSA	80%	20-150%
	d3-MeFOSA	73%	20-150%
	d5-EtFOSA	84%	20-150%
	d3-MeFOSAA	89%	20-150%
	d5-EtFOSAA	89%	20-150%
	d7-MeFOSE	61%	20-150%
	d9-EtFOSE	76%	20-150%
	13C2-4:2FTS	94%	20-180%
	13C2-6:2FTS	96%	20-180%
	13C2-8:2FTS	90%	20-180%
	13C3-HFPO-DA	97%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-MS	4Q55044.D	1	12/11/23	AL	12/11/23	OP552	S4Q806
FC11787-2	4Q55043.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	FC11787-2 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	0.0909	0.0991	109	40-150
2706-90-3	Perfluoropentanoic acid	0.0073 U	0.0455	0.0493	108	40-150
307-24-4	Perfluorohexanoic acid	0.0037 U	0.0227	0.0240	106	40-150
375-85-9	Perfluoroheptanoic acid	0.0037 U	0.0227	0.0252	111	40-150
335-67-1	Perfluorooctanoic acid	0.0037 U	0.0227	0.0236	104	40-150
375-95-1	Perfluorononanoic acid	0.0037 U	0.0227	0.0234	103	40-150
335-76-2	Perfluorodecanoic acid	0.0037 U	0.0227	0.0216	95	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037 U	0.0227	0.0249	110	40-150
307-55-1	Perfluorododecanoic acid	0.0037 U	0.0227	0.0239	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037 U	0.0227	0.0240	106	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037 U	0.0227	0.0256	113	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0037 U	0.0202	0.0230	114	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U	0.0214	0.0226	106	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0037 U	0.0208	0.0230	111	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U	0.0217	0.0246	114	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U	0.0211	0.0229	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037 U	0.0219	0.0238	109	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037 U	0.0219	0.0205	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U	0.022	0.0195	88	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	0.0852	0.101	119	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	0.0864	0.0940	109	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	0.0873	0.100	115	40-150
754-91-6	PFOSA	0.0037 U	0.0227	0.0240	106	40-150
31506-32-8	MeFOSA	0.0073 U	0.0455	0.0440	97	40-150
4151-50-2	EtFOSA	0.0073 U	0.0455	0.0445	98	40-150
2355-31-9	MeFOSAA	0.0046 U	0.0227	0.0265	117	40-150
2991-50-6	EtFOSAA	0.0046 U	0.0227	0.0241	106	40-150
24448-09-7	MeFOSE	0.037 U	0.114	0.111	98	40-150
1691-99-2	EtFOSE	0.037 U	0.114	0.111	98	40-150
13252-13-6	HFPO-DA (GenX)	0.0037 U	0.0455	0.0462	102	40-150
919005-14-4	ADONA	0.0073 U	0.043	0.0485	113	40-150
377-73-1	PFMPA	0.0073 U	0.0455	0.0452	99	40-150
863090-89-5	PFMBA	0.0073 U	0.0455	0.0456	100	40-150
151772-58-6	NFDHA	0.0073 U	0.0455	0.0469	103	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0073 U	0.0425	0.0444	104	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0073 U	0.043	0.0378	88	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-MS	4Q55044.D	1	12/11/23	AL	12/11/23	OP552	S4Q806
FC11787-2	4Q55043.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	FC11787-2 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0073 U	0.0405	0.0424	105	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.114	0.171	150	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.092 U	0.568	0.594	105	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.092 U	0.568	0.609	107	40-150

CAS No.	ID Standard Recoveries	MS	FC11787-2	Limits
	13C4-PFBA	60%	65%	20-150%
	13C5-PFPeA	99%	82%	20-150%
	13C5-PFHxA	96%	81%	20-150%
	13C4-PFHpA	97%	83%	20-150%
	13C8-PFOA	96%	79%	20-150%
	13C9-PFNA	96%	80%	20-150%
	13C6-PFDA	101%	78%	20-150%
	13C7-PFUnDA	95%	83%	20-150%
	13C2-PFDoDA	81%	70%	20-150%
	13C2-PFTeDA	74%	60%	20-150%
	13C3-PFBS	96%	78%	20-150%
	13C3-PFHxS	102%	88%	20-150%
	13C8-PFOS	86%	76%	20-150%
	13C8-FOSA	85%	67%	20-150%
	d3-MeFOSA	85%	65%	20-150%
	d5-EtFOSA	91%	66%	20-150%
	d3-MeFOSAA	80%	73%	20-150%
	d5-EtFOSAA	83%	73%	20-150%
	d7-MeFOSE	66%	49%	20-150%
	d9-EtFOSE	83%	63%	20-150%
	13C2-4:2FTS	80%	73%	20-180%
	13C2-6:2FTS	92%	80%	20-180%
	13C2-8:2FTS	87%	71%	20-180%
	13C3-HFPO-DA	99%	83%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-DUP	4Q55042.D	1	12/11/23	AL	12/11/23	OP552	S4Q806
FC11787-1	4Q55041.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	FC11787-1 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.014 U	ND		nc		30
2706-90-3	Perfluoropentanoic acid	0.0072 U	ND		nc		30
307-24-4	Perfluorohexanoic acid	0.0036 U	ND		nc		30
375-85-9	Perfluoroheptanoic acid	0.0036 U	ND		nc		30
335-67-1	Perfluorooctanoic acid	0.0036 U	ND		nc		30
375-95-1	Perfluorononanoic acid	0.0036 U	ND		nc		30
335-76-2	Perfluorodecanoic acid	0.0036 U	ND		nc		30
2058-94-8	Perfluoroundecanoic acid	0.0036 U	ND		nc		30
307-55-1	Perfluorododecanoic acid	0.0036 U	ND		nc		30
72629-94-8	Perfluorotridecanoic acid	0.0036 U	ND		nc		30
376-06-7	Perfluorotetradecanoic acid	0.0036 U	ND		nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0036 U	ND		nc		30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	ND		nc		30
355-46-4	Perfluorohexanesulfonic acid	0.0036 U	ND		nc		30
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U	ND		nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0036 U	ND		nc		30
68259-12-1	Perfluorononanesulfonic acid	0.0036 U	ND		nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0036 U	ND		nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U	ND		nc		30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	ND		nc		30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	ND		nc		30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	ND		nc		30
754-91-6	PFOSA	0.0036 U	ND		nc		30
31506-32-8	MeFOSA	0.0072 U	ND		nc		30
4151-50-2	EtFOSA	0.0072 U	ND		nc		30
2355-31-9	MeFOSAA	0.0045 U	ND		nc		30
2991-50-6	EtFOSAA	0.0045 U	ND		nc		30
24448-09-7	MeFOSE	0.036 U	ND		nc		30
1691-99-2	EtFOSE	0.036 U	ND		nc		30
13252-13-6	HFPO-DA (GenX)	0.0036 U	ND		nc		30
919005-14-4	ADONA	0.0072 U	ND		nc		30
377-73-1	PFMPA	0.0072 U	ND		nc		30
863090-89-5	PFMBA	0.0072 U	ND		nc		30
151772-58-6	NFDHA	0.0072 U	ND		nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0072 U	ND		nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0072 U	ND		nc		30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC11787
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP552-DUP	4Q55042.D	1	12/11/23	AL	12/11/23	OP552	S4Q806
FC11787-1	4Q55041.D	1	12/11/23	AL	12/11/23	OP552	S4Q806

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11787-1, FC11787-2

CAS No.	Compound	FC11787-1 ug/l	DUP Q ug/l	Q RPD	Limits
113507-82-7	PFEESA	0.0072 U	ND	nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	ND	nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.090 U	ND	nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.090 U	ND	nc	30

CAS No.	ID Standard Recoveries	DUP	FC11787-1	Limits
	13C4-PFBA	83%	68%	20-150%
	13C5-PFPeA	100%	79%	20-150%
	13C5-PFHxA	95%	79%	20-150%
	13C4-PFHpA	99%	79%	20-150%
	13C8-PFOA	94%	79%	20-150%
	13C9-PFNA	89%	77%	20-150%
	13C6-PFDA	95%	74%	20-150%
	13C7-PFUnDA	94%	72%	20-150%
	13C2-PFDoDA	81%	63%	20-150%
	13C2-PFTeDA	73%	56%	20-150%
	13C3-PFBS	90%	79%	20-150%
	13C3-PFHxS	96%	84%	20-150%
	13C8-PFOS	87%	74%	20-150%
	13C8-FOSA	81%	69%	20-150%
	d3-MeFOSA	81%	67%	20-150%
	d5-EtFOSA	91%	73%	20-150%
	d3-MeFOSAA	87%	68%	20-150%
	d5-EtFOSAA	81%	64%	20-150%
	d7-MeFOSE	64%	55%	20-150%
	d9-EtFOSE	78%	68%	20-150%
	13C2-4:2FTS	85%	70%	20-180%
	13C2-6:2FTS	90%	77%	20-180%
	13C2-8:2FTS	90%	69%	20-180%
	13C3-HFPO-DA	97%	80%	20-150%

* = Outside of Control Limits.