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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC11101

Sampling Date: 11/08/23



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Total number of pages in report: 47



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

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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC11101

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC11101-1	11/08/23	09:05	CPLW 11/09/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2311
FC11101-2	11/08/23	11:35	GALW11/09/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2311
FC11101-3	11/08/23	10:05	GALW11/09/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2311
FC11101-4	11/08/23	12:35	GACP 11/09/23	AQ	Ground Water	AF-RHMW17S-WGN01LF-2311
FC11101-5	11/08/23	11:20	GACP 11/09/23	AQ	Equipment Blank	AF-RHMW17S-WQEB01-2311

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC11101

Site: N6274223F0104 RH Fire Suppression System

Report Date: 11/19/2023 10:19:03 A

On 11/09/2023, 3 Sample(s), 0 Trip Blank(s), 1 Equip. Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC11101 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: OP164
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- 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.
- OP164-BS: Insufficient sample for MS/MSD.
- FC11101-2: Sample re-extracted due to EIS failure in the original run.

Matrix: AQ	Batch ID: OP58
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- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) FC11101-1MS, FC11101-2DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 3:3 Fluorotelomer carboxylate are outside control limits.
- RPD(s) for Duplicate for 6:2 Fluorotelomer sulfonate are outside control limits for sample OP58-DUP. Probable cause is due to sample non-homogeneity.
- Sample(s) FC11101-2 have surrogates outside control limits.
- FC11101-2 for 3:3 Fluorotelomer carboxylate: Associated BS outside control limits high, sample was ND. Associated ID Standard outside control limits.
- FC11101-1 for 3:3 Fluorotelomer carboxylate: Associated BS outside control limits high, sample was ND.
- FC11101-5 for 3:3 Fluorotelomer carboxylate: Associated BS outside control limits high, sample was ND.
- FC11101-2 for 13C4-PFBA: Outside control limits.
- FC11101-2 for PFMPA: Associated ID Standard outside control limits.
- FC11101-2 for PFMBA: Associated ID Standard outside control limits.
- FC11101-3 for 3:3 Fluorotelomer carboxylate: Associated BS outside control limits high, sample was ND.
- FC11101-4 for 3:3 Fluorotelomer carboxylate: Associated BS outside control limits high, sample was ND.
- FC11101-2 for 13C5-PFPeA: Outside control limits.

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.

Summary of Hits

Job Number: FC11101
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 11/08/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC11101-1 AF-RHMW17-WGN01LF-2311

No hits reported in this sample.

FC11101-2 AF-RHMW17D-WGN01LF-2311

6:2 Fluorotelomer sulfonate	3.7 J	18	7.3	ng/l	EPA DRAFT 1633
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FC11101-3 AF-RHMW17D-WQFB01-2311

No hits reported in this sample.

FC11101-4 AF-RHMW17S-WGN01LF-2311

Perfluorooctanoic acid	0.53 J	3.8	0.94	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid	0.96 J	3.8	1.9	ng/l	EPA DRAFT 1633

FC11101-5 AF-RHMW17S-WQEB01-2311

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2311	
Lab Sample ID:	FC11101-1	Date Sampled: 11/08/23
Matrix:	AQ - Ground Water	Date Received: 11/09/23
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	4Q53881.D	1	11/15/23 14:23	AL	11/13/23 11:10	OP58	S4Q786
Run #2							

Run #	Initial Volume	Final Volume
Run #1	525 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	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.6	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.95 U	3.8	0.95	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.80	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.61	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.6 U	19	7.6	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.6 U	19	7.6	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.6 U	19	7.6	3.9	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.6	3.8	0.95	ng/l	
4151-50-2	EtFOSA	3.8 U	7.6	3.8	0.95	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-RHMW17-WGN01LF-2311	
Lab Sample ID:	FC11101-1	Date Sampled: 11/08/23
Matrix:	AQ - Ground Water	Date Received: 11/09/23
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	3.8 U	4.8	3.8	0.95	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.95	ng/l	
919005-14-4	ADONA	3.8 U	7.6	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.6	1.9	0.95	ng/l	
863090-89-5	PFMBA	3.8 U	7.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.6	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.6	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.6	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.6	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylat ^a	9.5 U	19	9.5	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	95	19	8.3	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	95	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		20-150%
	13C5-PFPeA	95%		20-150%
	13C5-PFHxA	95%		20-150%
	13C4-PFHpA	94%		20-150%
	13C8-PFOA	93%		20-150%
	13C9-PFNA	96%		20-150%
	13C6-PFDA	85%		20-150%
	13C7-PFUnDA	78%		20-150%
	13C2-PFDoDA	65%		20-150%
	13C2-PFTeDA	58%		20-150%
	13C3-PFBS	91%		20-150%
	13C3-PFHxS	91%		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

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Report of Analysis

Client Sample ID: AF-RHMW17-WGN01LF-2311		Date Sampled: 11/08/23
Lab Sample ID: FC11101-1		Date Received: 11/09/23
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA DRAFT 1633 EPA 1633 DRAFT		
Project: N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	88%		20-150%
	13C8-FOSA	90%		20-150%
	d3-MeFOSA	63%		20-150%
	d5-EtFOSA	70%		20-150%
	d3-MeFOSAA	103%		20-150%
	d5-EtFOSAA	86%		20-150%
	d7-MeFOSE	66%		20-150%
	d9-EtFOSE	66%		20-150%
	13C2-4:2FTS	107%		20-180%
	13C2-6:2FTS	111%		20-180%
	13C2-8:2FTS	108%		20-180%
	13C3-HFPO-DA	90%		20-150%

(a) Associated BS outside control limits high, sample was ND.

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-RHMW17D-WGN01LF-2311		
Lab Sample ID:	FC11101-2	Date Sampled:	11/08/23
Matrix:	AQ - Ground Water	Date Received:	11/09/23
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	4Q53883.D	1	11/15/23 14:52	AL	11/13/23 11:10	OP58	S4Q786
Run #2 ^a	4Q54054.D	1	11/17/23 23:41	AL	11/16/23 15:00	OP164	S4Q788

Run #	Initial Volume	Final Volume
Run #1	545 ml	5.0 ml
Run #2	65.0 ml	5.0 ml

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

375-22-4	Perfluorobutanoic acid	31 U ^b	120	31	15	ng/l	
2706-90-3	Perfluoropentanoic acid	15 U ^b	62	15	7.2	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	3.7	18	7.3	3.2	ng/l	J
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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2311	
Lab Sample ID:	FC11101-2	Date Sampled: 11/08/23
Matrix:	AQ - Ground Water	Date Received: 11/09/23
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 ^c	1.8 U	7.3	1.8	0.92	ng/l	
863090-89-5	PFMBA ^c	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 carboxylat ^d	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
13C4-PFBA		2% ^e	22%	20-150%
13C5-PFPeA		11% ^e	80%	20-150%
13C5-PFHxA		84%	98%	20-150%
13C4-PFHpA		102%	99%	20-150%
13C8-PFOA		101%	98%	20-150%
13C9-PFNA		101%	91%	20-150%
13C6-PFDA		91%	87%	20-150%
13C7-PFUnDA		90%	91%	20-150%
13C2-PFDoDA		78%	83%	20-150%
13C2-PFTeDA		65%	74%	20-150%
13C3-PFBS		103%	97%	20-150%
13C3-PFHxS		108%	101%	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

4.2
4

Report of Analysis

Client Sample ID: AF-RHMW17D-WGN01LF-2311		Date Sampled: 11/08/23
Lab Sample ID: FC11101-2		Date Received: 11/09/23
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA DRAFT 1633 EPA 1633 DRAFT		
Project: N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	102%	83%	20-150%
	13C8-FOSA	111%	88%	20-150%
	d3-MeFOSA	99%	80%	20-150%
	d5-EtFOSA	104%	80%	20-150%
	d3-MeFOSAA	123%	97%	20-150%
	d5-EtFOSAA	131%	94%	20-150%
	d7-MeFOSE	83%	74%	20-150%
	d9-EtFOSE	84%	79%	20-150%
	13C2-4:2FTS	162%	114%	20-180%
	13C2-6:2FTS	151%	104%	20-180%
	13C2-8:2FTS	135%	102%	20-180%
	13C3-HFPO-DA	73%	95%	20-150%

- (a) Sample re-extracted due to EIS failure in the original run.
- (b) Result is from Run# 2
- (c) Associated ID Standard outside control limits.
- (d) Associated BS outside control limits high, sample was ND. Associated ID Standard outside control limits.
- (e) Outside control limits.

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-RHMW17D-WQFB01-2311		
Lab Sample ID:	FC11101-3	Date Sampled:	11/08/23
Matrix:	AQ - Field Blank Water	Date Received:	11/09/23
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	4Q53885.D	1	11/15/23 15:22	AL	11/13/23 11:10	OP58	S4Q786
Run #2							

Run #	Initial Volume	Final Volume
Run #1	530 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	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.5	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	3.8	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	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-RHMW17D-WQFB01-2311		
Lab Sample ID:	FC11101-3	Date Sampled:	11/08/23
Matrix:	AQ - Field Blank Water	Date Received:	11/09/23
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.0	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.94	ng/l	
919005-14-4	ADONA	3.8 U	7.5	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	7.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.5	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.5	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.5	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylat ^a	9.4 U	19	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	94	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	94	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	94%		20-150%
	13C5-PFPeA	93%		20-150%
	13C5-PFHxA	91%		20-150%
	13C4-PFHpA	95%		20-150%
	13C8-PFOA	91%		20-150%
	13C9-PFNA	81%		20-150%
	13C6-PFDA	85%		20-150%
	13C7-PFUnDA	80%		20-150%
	13C2-PFDoDA	66%		20-150%
	13C2-PFTeDA	66%		20-150%
	13C3-PFBS	91%		20-150%
	13C3-PFHxS	92%		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-RHMW17D-WQFB01-2311		Date Sampled:	11/08/23
Lab Sample ID:	FC11101-3		Date Received:	11/09/23
Matrix:	AQ - Field Blank Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	81%		20-150%
	13C8-FOSA	76%		20-150%
	d3-MeFOSA	55%		20-150%
	d5-EtFOSA	62%		20-150%
	d3-MeFOSAA	85%		20-150%
	d5-EtFOSAA	80%		20-150%
	d7-MeFOSE	64%		20-150%
	d9-EtFOSE	67%		20-150%
	13C2-4:2FTS	109%		20-180%
	13C2-6:2FTS	112%		20-180%
	13C2-8:2FTS	94%		20-180%
	13C3-HFPO-DA	90%		20-150%

(a) Associated BS outside control limits high, sample was ND.

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-RHMW17S-WGN01LF-2311		
Lab Sample ID:	FC11101-4	Date Sampled:	11/08/23
Matrix:	AQ - Ground Water	Date Received:	11/09/23
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	4Q53886.D	1	11/15/23 15:37	AL	11/13/23 11:10	OP58	S4Q786
Run #2							

Run #	Initial Volume	Final Volume
Run #1	530 ml	5.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.5	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.53	3.8	0.94	0.47	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	0.96	3.8	1.9	0.51	ng/l	J
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	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-RHMW17S-WGN01LF-2311		
Lab Sample ID:	FC11101-4	Date Sampled:	11/08/23
Matrix:	AQ - Ground Water	Date Received:	11/09/23
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.0	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.94	ng/l	
919005-14-4	ADONA	3.8 U	7.5	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	7.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.5	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.5	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.5	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylat ^a	9.4 U	19	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	94	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	94	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		20-150%
	13C5-PFPeA	106%		20-150%
	13C5-PFHxA	100%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	103%		20-150%
	13C6-PFDA	96%		20-150%
	13C7-PFUnDA	103%		20-150%
	13C2-PFDoDA	84%		20-150%
	13C2-PFTeDA	74%		20-150%
	13C3-PFBS	102%		20-150%
	13C3-PFHxS	105%		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

4.4
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2311	
Lab Sample ID:	FC11101-4	Date Sampled: 11/08/23
Matrix:	AQ - Ground Water	Date Received: 11/09/23
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	93%		20-150%
	13C8-FOSA	99%		20-150%
	d3-MeFOSA	68%		20-150%
	d5-EtFOSA	72%		20-150%
	d3-MeFOSAA	114%		20-150%
	d5-EtFOSAA	114%		20-150%
	d7-MeFOSE	75%		20-150%
	d9-EtFOSE	74%		20-150%
	13C2-4:2FTS	125%		20-180%
	13C2-6:2FTS	106%		20-180%
	13C2-8:2FTS	93%		20-180%
	13C3-HFPO-DA	92%		20-150%

(a) Associated BS outside control limits high, sample was ND.

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-RHMW17S-WQEB01-2311		
Lab Sample ID:	FC11101-5	Date Sampled:	11/08/23
Matrix:	AQ - Equipment Blank	Date Received:	11/09/23
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	4Q53887.D	1	11/15/23 15:51	AL	11/13/23 11:10	OP58	S4Q786
Run #2							

Run #	Initial Volume	Final Volume
Run #1	525 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	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.6	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.95 U	3.8	0.95	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.80	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.61	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.6 U	19	7.6	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.6 U	19	7.6	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.6 U	19	7.6	3.9	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.6	3.8	0.95	ng/l	
4151-50-2	EtFOSA	3.8 U	7.6	3.8	0.95	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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2311	
Lab Sample ID:	FC11101-5	Date Sampled: 11/08/23
Matrix:	AQ - Equipment Blank	Date Received: 11/09/23
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	3.8 U	4.8	3.8	0.95	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.95	ng/l	
919005-14-4	ADONA	3.8 U	7.6	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.6	1.9	0.95	ng/l	
863090-89-5	PFMBA	3.8 U	7.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.6	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.6	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.6	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.6	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylat ^a	9.5 U	19	9.5	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	95	19	8.3	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	95	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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13C4-PFBA	97%		20-150%
13C5-PFPeA	98%		20-150%
13C5-PFHxA	93%		20-150%
13C4-PFHpA	99%		20-150%
13C8-PFOA	91%		20-150%
13C9-PFNA	86%		20-150%
13C6-PFDA	87%		20-150%
13C7-PFUnDA	89%		20-150%
13C2-PFDoDA	76%		20-150%
13C2-PFTeDA	78%		20-150%
13C3-PFBS	97%		20-150%
13C3-PFHxS	92%		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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2311		
Lab Sample ID:	FC11101-5	Date Sampled:	11/08/23
Matrix:	AQ - Equipment Blank	Date Received:	11/09/23
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	87%		20-150%
	13C8-FOSA	84%		20-150%
	d3-MeFOSA	68%		20-150%
	d5-EtFOSA	74%		20-150%
	d3-MeFOSAA	97%		20-150%
	d5-EtFOSAA	90%		20-150%
	d7-MeFOSE	75%		20-150%
	d9-EtFOSE	77%		20-150%
	13C2-4:2FTS	114%		20-180%
	13C2-6:2FTS	109%		20-180%
	13C2-8:2FTS	101%		20-180%
	13C3-HFPO-DA	95%		20-150%

(a) Associated BS outside control limits high, sample was ND.

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
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www.sgs.com

COC #: 2311AFSG10

SGS - ORLANDO JOB #:

PAGE 1 OF 1

FC11101

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes												
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		 PFAS EPA Draft 1633		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																
Sampler(s) Name(s) (Printed)																		
Sampler 1: <i>Cristina Perez</i>		Sampler 2: <i>Liz Walker</i>																
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	CONTAINER INFORMATION												LAB USE ONLY
						TOTAL # OF BOTTLES	OTHER	NONE	HCl	HN03	HN03	HS04	HS04	MAOH-ZNAC	DI WATER	MECH		
1	AF-RHWM17-WGN01LF-2311	11/8/23	0905	CP WJ	GW	3	X											
 INITIAL ASSESSMENT: <i>SP</i> LABEL VERIFICATION: <i>JD</i>		Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks												
		<input type="checkbox"/> 10 Day (Business) <input type="checkbox"/> 7 Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH Other _____		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: 010 - 97593920 4.2 FEH/1										
		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	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation								
1 <i>Cristina Perez / AECOM</i>	11/8/23 1145	2 <i>Ellie Shimatsu AECOM</i>	3 <i>Ellie Shimatsu AECOM</i>	11/8/23 1420	4 <i>UC</i>	5 <i>UC</i>												
6 <i>UC</i>		7 <i>UC</i>	8 <i>UC</i>															

PFAS_COCs_ALL_10022023.xls Rev 031318

FC11101: Chain of Custody

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Chain of Custody

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www.sgs.com

COC #: 2311AFSG11

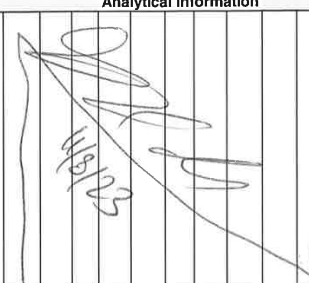
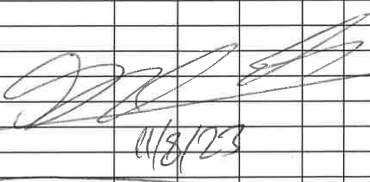
PAGE 1 OF 1

SGS - ORLANDO JOB # :

FC11101

SGS - ORLANDO Quote #

Staff #

Client / Reporting Information			Project Information										Analytical Information										Matrix Codes			
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System																				DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge 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 Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512			Project # CTO CVI23F0104 Fax #																							
Sampler(s) Name(s) (Printed) Sampler 1: <i>Caroline Allen</i> Sampler 2: <i>Uz Walker</i>			Client Purchase Order # 151253										*PFAS EPA Draft 1633 LAB USE ONLY													
SGS Orlando Sample #	Field ID / Point of Collection		COLLECTION			CONTAINER INFORMATION																				
	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NADH	HNO3	H2SO4	NACHLZNAAC											DI WATER	MESH		
2	AF-RHMW17D-WGN01LF-2311	11/8/23	1135	LW	GW	3		X																		X
3	AF-RHMW17D-WQFB01-2311	11/8/23	1005	GA	WW	3		X																		X
																										
Turnaround Time (Business days)			Data Deliverable Information																				Comments / Remarks			
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other			<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 *Extra bottleware is to be used for an MS/MSD - <i>ES 11/8/23</i> United AWB: <i>016 - 97593924</i>			
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														
1 <i>Caroline Allen/AECOM</i>		11/8/23 1430		2 <i>Ellie Shimatsu AECOM</i>		11/8/23 1430		3 <i>Ellie Shimatsu AECOM</i>		11/8/23 1430		4 <i>UC</i>														
5 <i>UC</i>		11/09/23 1730		6 <i>UC</i>		11/09/23 1730		7				8														
Lab Use Only : Cooler Temperature (s) Celsius (corrected):																										
http://www.sgs.com/en/terms-and-conditions																										

PFAS_COCs_ALL_10022023.xls Rev 031318

FC11101: Chain of Custody

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SGS North America Inc - Orlando Chain of Custody

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COC #: 2311AFSG12
PAGE 1 OF 1
SGS - ORLANDO JOB # : **FC11101**
SGS - ORLANDO Quote # **FC11101**

Client / Reporting Information			Project Information			Analytical Information			Matrix Codes				
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System						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 # CTO CVI23F0104										
Project Manager: Watson Tanji Email: watson.tanji@aecom.com			Fax #										
Phone #: 303-796-4624 / 808-954-4512			Client Purchase Order # 151253			PFAS EPA Draft 1633			LAB USE ONLY				
SGS Orlando Sample #		Field ID / Point of Collection		COLLECTION		CONTAINER INFORMATION							
DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	PCB	PH3	PH203	PH204	NAOH+ZNAC	DI WATER	RECH
4	11/8/23	12:35	GA CP	GW	3		X						X
5	11/8/23	11:20	GA CP	WW	3		X						X
Turnaround Time (Business days)		Data Deliverable Information				Comments / Remarks							
10 Day (Business) 7 Day <input type="checkbox"/> 5 Day <input checked="" type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH Other _____		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: 016-97593926							
Rush T/A Data Available VIA Email or Lablink		Sample Custody must be documented below each time samples change possession, including courier delivery.											
Reinquired by Sampler/Affiliation		Date Time:		Received By/Affiliation		Reinquired By/Affiliation		Date Time:		Received By/Affiliation			
1 <i>Carla R. Miller / AECOM</i>		11/8/23 13:35		2 Ellie Shimatsu AECOM		3 Ellie Shimatsu AECOM		11/8/23 14:30		4 UC			
5 UC		6 <i>[Signature]</i> 11/09/23		7		8							
Lab Use Only: Cooler Temperature (s) Celsius (corrected): _____ http://www.sgs.com/en/terms-and-conditions													



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SGS Sample Receipt Summary

Job Number: fc11101

Client: AECOM

Project: N6274223F0104 RH Fire Suppression Syst

Date / Time Received: 11/9/2023 5:30:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-97593926

Cooler Temps (Raw Measured) °C: Cooler 1: (4.2);

Cooler Temps (Corrected) °C: Cooler 1: (4.6);

Cooler Informatio

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 analysi:
- 4. Condition of sample: Intact
- 5. Sample recv'd within HT:
- 6. Dates/Times/IDs on COC match sample labe:
- 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

Test Strip Lot #: pH 0-3: 226422

Residual Chlorine Test Strip Lot: _____

Number of Lab Filtered Metals

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

Comments

SM001

Rev. Date 05/04/17

Technician: SHAYLAP

Date: 11/09/2023 5:30:00 AM

Reviewer: ZD

Date: 11/09/2023

FC11101: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC11101
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 11/08/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
--------------	------	---------	--------------------	-------------	-------	--------

No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC11101

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: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q788-IBLK	4Q54014.D	1	11/17/23	AL	n/a	n/a	S4Q788

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	98% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	104% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	95% 20-150%
	13C3-PFHxS	96% 20-150%
	13C8-PFOS	99% 20-150%
	13C8-FOSA	104% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	102% 20-150%
	d3-MeFOSAA	115% 20-150%
	d5-EtFOSAA	111% 20-150%
	d7-MeFOSE	104% 20-150%
	d9-EtFOSE	104% 20-150%
	13C2-4:2FTS	110% 20-180%
	13C2-6:2FTS	104% 20-180%
	13C2-8:2FTS	107% 20-180%
	13C3-HFPO-DA	99% 20-150%

Continuing Calibration Blank

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q788-ICCB	4Q54048.D	1	11/17/23	AL	n/a	n/a	S4Q788

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	103% 20-150%
	13C6-PFDA	104% 20-150%
	13C7-PFUnDA	102% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	100% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	94% 20-150%
	d3-MeFOSA	93% 20-150%
	d5-EtFOSA	97% 20-150%
	d3-MeFOSAA	105% 20-150%
	d5-EtFOSAA	108% 20-150%
	d7-MeFOSE	95% 20-150%
	d9-EtFOSE	96% 20-150%
	13C2-4:2FTS	132% 20-180%
	13C2-6:2FTS	116% 20-180%
	13C2-8:2FTS	121% 20-180%
	13C3-HFPO-DA	96% 20-150%

Instrument Blank

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q786-IBLK	4Q53867.D	1	11/15/23	AL	n/a	n/a	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

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	0.0018	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	0.0049	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: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q786-IBLK	4Q53867.D	1	11/15/23	AL	n/a	n/a	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

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	102% 20-150%
	13C4-PFHpA	107% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	105% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	114% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	117% 20-150%
	13C3-PFHxS	114% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	110% 20-150%
	d3-MeFOSAA	127% 20-150%
	d5-EtFOSAA	115% 20-150%
	13C2-4:2FTS	177% 20-180%
	13C2-6:2FTS	162% 20-180%
	13C2-8:2FTS	158% 20-180%

Continuing Calibration Blank

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q786-ICCB	4Q53880.D	1	11/15/23	AL	n/a	n/a	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

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: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q786-ICCB	4Q53880.D	1	11/15/23	AL	n/a	n/a	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

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	101% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	105% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	103% 20-150%
	13C2-PFDoDA	95% 20-150%
	13C2-PFTeDA	97% 20-150%
	13C3-PFBS	94% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	97% 20-150%
	d3-MeFOSAA	114% 20-150%
	d5-EtFOSAA	99% 20-150%
	13C2-4:2FTS	148% 20-180%
	13C2-6:2FTS	131% 20-180%
	13C2-8:2FTS	145% 20-180%

Method Blank Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-MB	4Q53873.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

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: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-MB	4Q53873.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

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	103% 20-150%
	13C5-PFPeA	98% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	98% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	87% 20-150%
	13C2-PFTeDA	76% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	106% 20-150%
	13C8-PFOS	94% 20-150%
	13C8-FOSA	81% 20-150%
	d3-MeFOSA	62% 20-150%
	d5-EtFOSA	65% 20-150%
	d3-MeFOSAA	106% 20-150%
	d5-EtFOSAA	97% 20-150%
	d7-MeFOSE	68% 20-150%
	d9-EtFOSE	73% 20-150%
	13C2-4:2FTS	151% 20-180%
	13C2-6:2FTS	157% 20-180%
	13C2-8:2FTS	145% 20-180%
	13C3-HFPO-DA	97% 20-150%

Method Blank Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP164-MB	4Q54051.D	1	11/17/23	AL	11/17/23	OP164	S4Q788

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-2

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	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	97% 20-150%
	13C5-PFPeA	98% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	97% 20-150%
	13C8-PFOA	90% 20-150%
	13C9-PFNA	89% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	104% 20-150%
	13C2-PFDoDA	90% 20-150%
	13C2-PFTeDA	87% 20-150%
	13C3-PFBS	91% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	86% 20-150%
	13C8-FOSA	86% 20-150%
	d3-MeFOSA	72% 20-150%
	d5-EtFOSA	78% 20-150%
	d3-MeFOSAA	93% 20-150%
	d5-EtFOSAA	90% 20-150%
	d7-MeFOSE	77% 20-150%
	d9-EtFOSE	83% 20-150%
	13C2-4:2FTS	132% 20-180%
	13C2-6:2FTS	131% 20-180%
	13C2-8:2FTS	125% 20-180%
	13C3-HFPO-DA	91% 20-150%

Blank Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-LLBS	4Q53872.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0285	95	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0136	91	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0070	93	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0068	91	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0068	91	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0076	101	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0071	95	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0068	91	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0077	103	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0074	99	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0082	109	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0054	81	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0071	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0066	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0075	105	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0070	101	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0077	107	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0077	106	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0063	87	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0286	102	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0285	100	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0312	108	40-150
754-91-6	PFOSA	0.0075	0.0071	95	40-150
31506-32-8	MeFOSA	0.015	0.0144	96	40-150
4151-50-2	EtFOSA	0.015	0.0138	92	40-150
2355-31-9	MeFOSAA	0.0075	0.0063	84	40-150
2991-50-6	EtFOSAA	0.0075	0.0076	101	40-150
24448-09-7	MeFOSE	0.0375	0.0337	90	40-150
1691-99-2	EtFOSE	0.0375	0.0389	104	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0138	92	40-150
919005-14-4	ADONA	0.0142	0.0158	111	40-150
377-73-1	PFMPA	0.015	0.0162	108	40-150
863090-89-5	PFMBA	0.015	0.0155	103	40-150
151772-58-6	NFDHA	0.015	0.0192	128	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0143	102	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0127	90	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-LLBS	4Q53872.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0149	112	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0342	91	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.171	91	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.180	96	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	97%	20-150%
	13C5-PFPeA	96%	20-150%
	13C5-PFHxA	94%	20-150%
	13C4-PFHpA	96%	20-150%
	13C8-PFOA	98%	20-150%
	13C9-PFNA	101%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	101%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	81%	20-150%
	13C3-PFBS	98%	20-150%
	13C3-PFHxS	98%	20-150%
	13C8-PFOS	88%	20-150%
	13C8-FOSA	97%	20-150%
	d3-MeFOSA	78%	20-150%
	d5-EtFOSA	84%	20-150%
	d3-MeFOSAA	116%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	86%	20-150%
	13C2-4:2FTS	122%	20-180%
	13C2-6:2FTS	143%	20-180%
	13C2-8:2FTS	134%	20-180%
	13C3-HFPO-DA	92%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP164-LLBS	4Q54050.D	1	11/17/23	AL	11/17/23	OP164	S4Q788

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0298	99	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0154	103	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	90%	20-150%
	13C7-PFUnDA	89%	20-150%
	13C2-PFDoDA	78%	20-150%
	13C2-PFTeDA	75%	20-150%
	13C3-PFBS	93%	20-150%
	13C3-PFHxS	95%	20-150%
	13C8-PFOS	87%	20-150%
	13C8-FOSA	85%	20-150%
	d3-MeFOSA	71%	20-150%
	d5-EtFOSA	76%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	67%	20-150%
	d9-EtFOSE	73%	20-150%
	13C2-4:2FTS	114%	20-180%
	13C2-6:2FTS	121%	20-180%
	13C2-8:2FTS	109%	20-180%
	13C3-HFPO-DA	95%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-BS	4Q53871.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0959	96	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0466	93	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0230	92	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0238	95	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0235	94	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0236	94	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0238	95	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0243	97	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0261	104	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0259	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0242	97	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0190	86	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0228	97	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0219	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0219	92	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0215	93	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0237	99	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0218	90	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0218	90	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0927	99	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.103	108	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0983	102	40-150
754-91-6	PFOSA	0.025	0.0228	91	40-150
31506-32-8	MeFOSA	0.05	0.0501	100	40-150
4151-50-2	EtFOSA	0.05	0.0481	96	40-150
2355-31-9	MeFOSAA	0.025	0.0238	95	40-150
2991-50-6	EtFOSAA	0.025	0.0258	103	40-150
24448-09-7	MeFOSE	0.125	0.111	89	40-150
1691-99-2	EtFOSE	0.125	0.122	98	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0460	92	40-150
919005-14-4	ADONA	0.0473	0.0545	115	40-150
377-73-1	PFMPA	0.05	0.0392	78	40-150
863090-89-5	PFMBA	0.05	0.0534	107	40-150
151772-58-6	NFDHA	0.05	0.0593	119	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0459	98	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0443	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-BS	4Q53871.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0501	113	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.225	180*	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.609	97	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.609	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	36%	20-150%
	13C5-PFPeA	87%	20-150%
	13C5-PFHxA	85%	20-150%
	13C4-PFHpA	87%	20-150%
	13C8-PFOA	86%	20-150%
	13C9-PFNA	86%	20-150%
	13C6-PFDA	85%	20-150%
	13C7-PFUnDA	85%	20-150%
	13C2-PFDoDA	76%	20-150%
	13C2-PFTeDA	74%	20-150%
	13C3-PFBS	91%	20-150%
	13C3-PFHxS	90%	20-150%
	13C8-PFOS	89%	20-150%
	13C8-FOSA	93%	20-150%
	d3-MeFOSA	78%	20-150%
	d5-EtFOSA	80%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	96%	20-150%
	d7-MeFOSE	80%	20-150%
	d9-EtFOSE	83%	20-150%
	13C2-4:2FTS	122%	20-180%
	13C2-6:2FTS	122%	20-180%
	13C2-8:2FTS	130%	20-180%
	13C3-HFPO-DA	83%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP164-BS ^a	4Q54049.D	1	11/17/23	AL	11/17/23	OP164	S4Q788

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.103	103	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0524	105	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	51%	20-150%
	13C5-PFPeA	87%	20-150%
	13C5-PFHxA	87%	20-150%
	13C4-PFHpA	87%	20-150%
	13C8-PFOA	86%	20-150%
	13C9-PFNA	83%	20-150%
	13C6-PFDA	88%	20-150%
	13C7-PFUnDA	89%	20-150%
	13C2-PFDoDA	80%	20-150%
	13C2-PFTeDA	73%	20-150%
	13C3-PFBS	83%	20-150%
	13C3-PFHxS	89%	20-150%
	13C8-PFOS	80%	20-150%
	13C8-FOSA	84%	20-150%
	d3-MeFOSA	74%	20-150%
	d5-EtFOSA	65%	20-150%
	d3-MeFOSAA	95%	20-150%
	d5-EtFOSAA	91%	20-150%
	d7-MeFOSE	68%	20-150%
	d9-EtFOSE	68%	20-150%
	13C2-4:2FTS	105%	20-180%
	13C2-6:2FTS	110%	20-180%
	13C2-8:2FTS	108%	20-180%
	13C3-HFPO-DA	83%	20-150%

(a) Insufficient sample for MS/MSD.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-MS	4Q53882.D	1	11/15/23	AL	11/13/23	OP58	S4Q786
FC11101-1	4Q53881.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	FC11101-1 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	0.0935	0.0899	96	40-150
2706-90-3	Perfluoropentanoic acid	0.0076 U	0.0467	0.0445	95	40-150
307-24-4	Perfluorohexanoic acid	0.0038 U	0.0234	0.0222	95	40-150
375-85-9	Perfluoroheptanoic acid	0.0038 U	0.0234	0.0222	95	40-150
335-67-1	Perfluorooctanoic acid	0.0038 U	0.0234	0.0220	94	40-150
375-95-1	Perfluorononanoic acid	0.0038 U	0.0234	0.0216	92	40-150
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0234	0.0203	87	40-150
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0234	0.0227	97	40-150
307-55-1	Perfluorododecanoic acid	0.0038 U	0.0234	0.0233	100	40-150
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.0234	0.0218	93	40-150
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0234	0.0233	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	0.0207	0.0194	94	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0048 U	0.022	0.0207	94	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	0.0214	0.0209	98	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U	0.0223	0.0213	96	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0038 U	0.0217	0.0214	99	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0038 U	0.0225	0.0217	97	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0038 U	0.0225	0.0197	87	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0048 U	0.0227	0.0193	85	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	0.0876	0.0788	90	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U	0.0888	0.0982	111	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	0.0897	0.0943	105	40-150
754-91-6	PFOSA	0.0038 U	0.0234	0.0211	90	40-150
31506-32-8	MeFOSA	0.0076 U	0.0467	0.0498	107	40-150
4151-50-2	EtFOSA	0.0076 U	0.0467	0.0469	100	40-150
2355-31-9	MeFOSAA	0.0048 U	0.0234	0.0205	88	40-150
2991-50-6	EtFOSAA	0.0048 U	0.0234	0.0274	117	40-150
24448-09-7	MeFOSE	0.038 U	0.117	0.108	92	40-150
1691-99-2	EtFOSE	0.038 U	0.117	0.113	97	40-150
13252-13-6	HFPO-DA (GenX)	0.0038 U	0.0467	0.0451	97	40-150
919005-14-4	ADONA	0.0076 U	0.0442	0.0501	113	40-150
377-73-1	PFMPA	0.0076 U	0.0467	0.0514	110	40-150
863090-89-5	PFMBA	0.0076 U	0.0467	0.0505	108	40-150
151772-58-6	NFDHA	0.0076 U	0.0467	0.0533	114	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0076 U	0.0437	0.0386	88	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0076 U	0.0442	0.0363	82	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-MS	4Q53882.D	1	11/15/23	AL	11/13/23	OP58	S4Q786
FC11101-1	4Q53881.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	FC11101-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0076 U	0.0416	0.0468	113	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.117	0.124	106	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.095 U	0.584	0.568	97	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.095 U	0.584	0.586	100	40-150

CAS No.	ID Standard Recoveries	MS	FC11101-1	Limits
	13C4-PFBA	84%	93%	20-150%
	13C5-PFPeA	98%	95%	20-150%
	13C5-PFHxA	98%	95%	20-150%
	13C4-PFHpA	100%	94%	20-150%
	13C8-PFOA	95%	93%	20-150%
	13C9-PFNA	101%	96%	20-150%
	13C6-PFDA	93%	85%	20-150%
	13C7-PFUnDA	90%	78%	20-150%
	13C2-PFDoDA	82%	65%	20-150%
	13C2-PFTeDA	73%	58%	20-150%
	13C3-PFBS	97%	91%	20-150%
	13C3-PFHxS	100%	91%	20-150%
	13C8-PFOS	87%	88%	20-150%
	13C8-FOSA	98%	90%	20-150%
	d3-MeFOSA	63%	63%	20-150%
	d5-EtFOSA	66%	70%	20-150%
	d3-MeFOSAA	103%	103%	20-150%
	d5-EtFOSAA	89%	86%	20-150%
	d7-MeFOSE	76%	66%	20-150%
	d9-EtFOSE	79%	66%	20-150%
	13C2-4:2FTS	119%	107%	20-180%
	13C2-6:2FTS	111%	111%	20-180%
	13C2-8:2FTS	114%	108%	20-180%
	13C3-HFPO-DA	95%	90%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-DUP	4Q53884.D	1	11/15/23	AL	11/13/23	OP58	S4Q786
FC11101-2	4Q53883.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	FC11101-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	ND		nc		30
2706-90-3	Perfluoropentanoic acid	0.0073 U	ND		nc		30
307-24-4	Perfluorohexanoic acid	0.0037 U	ND		nc		30
375-85-9	Perfluoroheptanoic acid	0.0037 U	ND		nc		30
335-67-1	Perfluorooctanoic acid	0.0037 U	ND		nc		30
375-95-1	Perfluorononanoic acid	0.0037 U	ND		nc		30
335-76-2	Perfluorodecanoic acid	0.0037 U	ND		nc		30
2058-94-8	Perfluoroundecanoic acid	0.0037 U	ND		nc		30
307-55-1	Perfluorododecanoic acid	0.0037 U	ND		nc		30
72629-94-8	Perfluorotridecanoic acid	0.0037 U	ND		nc		30
376-06-7	Perfluorotetradecanoic acid	0.0037 U	ND		nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0037 U	ND		nc		30
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U	ND		nc		30
355-46-4	Perfluorohexanesulfonic acid	0.0037 U	ND		nc		30
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U	ND		nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U	ND		nc		30
68259-12-1	Perfluorononanesulfonic acid	0.0037 U	ND		nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0037 U	ND		nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U	ND		nc		30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	ND		nc		30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0037 U	J	0.0076 U	J	69*	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	ND		nc		30
754-91-6	PFOSA	0.0037 U	ND		nc		30
31506-32-8	MeFOSA	0.0073 U	ND		nc		30
4151-50-2	EtFOSA	0.0073 U	ND		nc		30
2355-31-9	MeFOSAA	0.0046 U	ND		nc		30
2991-50-6	EtFOSAA	0.0046 U	ND		nc		30
24448-09-7	MeFOSE	0.037 U	ND		nc		30
1691-99-2	EtFOSE	0.037 U	ND		nc		30
13252-13-6	HFPO-DA (GenX)	0.0037 U	ND		nc		30
919005-14-4	ADONA	0.0073 U	ND		nc		30
377-73-1	PFMPA	0.0073 U	ND		nc		30
863090-89-5	PFMBA	0.0073 U	ND		nc		30
151772-58-6	NFDHA	0.0073 U	ND		nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0073 U	ND		nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0073 U	ND		nc		30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC11101
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58-DUP	4Q53884.D	1	11/15/23	AL	11/13/23	OP58	S4Q786
FC11101-2	4Q53883.D	1	11/15/23	AL	11/13/23	OP58	S4Q786

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11101-1, FC11101-2, FC11101-3, FC11101-4, FC11101-5

CAS No.	Compound	FC11101-2 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0073 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.092 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.092 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC11101-2	Limits
	13C4-PFBA	3%* a	2%* a	20-150%
	13C5-PFPeA	20%	11%* a	20-150%
	13C5-PFHxA	92%	84%	20-150%
	13C4-PFHpA	98%	102%	20-150%
	13C8-PFOA	94%	101%	20-150%
	13C9-PFNA	93%	101%	20-150%
	13C6-PFDA	104%	91%	20-150%
	13C7-PFUnDA	103%	90%	20-150%
	13C2-PFDoDA	92%	78%	20-150%
	13C2-PFTeDA	74%	65%	20-150%
	13C3-PFBS	96%	103%	20-150%
	13C3-PFHxS	101%	108%	20-150%
	13C8-PFOS	98%	102%	20-150%
	13C8-FOSA	109%	111%	20-150%
	d3-MeFOSA	100%	99%	20-150%
	d5-EtFOSA	103%	104%	20-150%
	d3-MeFOSAA	130%	123%	20-150%
	d5-EtFOSAA	132%	131%	20-150%
	d7-MeFOSE	86%	83%	20-150%
	d9-EtFOSE	88%	84%	20-150%
	13C2-4:2FTS	214%* a	162%	20-180%
	13C2-6:2FTS	143%	151%	20-180%
	13C2-8:2FTS	137%	135%	20-180%
	13C3-HFPO-DA	79%	73%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.