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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC9447

Sampling Date: 09/07/23



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Total number of pages in report: 50



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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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	5
Section 4: Sample Results	6
4.1: FC9447-1: AF-RHMW16-WGN01LF-2309	7
4.2: FC9447-2: AF-RHMW12A-WGN01LF-2309	10
4.3: FC9447-3: AF-RHMW12A-WGFD01LF-2309	13
4.4: FC9447-4: AF-RHMW02-WGN01LF-2309	16
4.5: FC9447-5: AF-RHMW02-WGFD01LF-2309	19
4.6: FC9447-6: AF-RHMW03-WGN01LF-2309	22
Section 5: Misc. Forms	25
5.1: Chain of Custody	26
5.2: QC Evaluation: DOD QSM5.x Limits	31
Section 6: MS Semi-volatiles - QC Data Summaries	32
6.1: Method Blank Summary	33
6.2: Blank Spike Summary	43
6.3: Matrix Spike Summary	47
6.4: Duplicate Summary	49

1

2

3

4

5

6



Sample Summary

AECOM, INC.

Job No: FC9447

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC9447-1	09/07/23	12:35	AAGM09/09/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2309
FC9447-2	09/07/23	09:40	AAGM09/09/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2309
FC9447-3	09/07/23	09:40	AAGM09/09/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2309
FC9447-4	09/07/23	10:45	CWTN09/09/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2309
FC9447-5	09/07/23	10:45	CWTN09/09/23	AQ	Ground Water	AF-RHMW02-WGFD01LF-2309
FC9447-6	09/07/23	13:40	CWTN09/09/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2309

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC9447

Site: N6274223F0104 RH Fire Suppression System

Report Date: 9/13/2023 4:24:42 PM

On 09/09/2023, 6 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC9447 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: OP98930

Sample(s) FC9447-3MS, FC9447-4DUP were used as the QC samples indicated.

Matrix Spike Recovery(s) for 3:3 Fluorotelomer carboxylate are outside control limits. Probable cause is due to matrix interference.

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: FC9447
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 09/07/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC9447-1 AF-RHMW16-WGN01LF-2309

No hits reported in this sample.

FC9447-2 AF-RHMW12A-WGN01LF-2309

No hits reported in this sample.

FC9447-3 AF-RHMW12A-WGFD01LF-2309

No hits reported in this sample.

FC9447-4 AF-RHMW02-WGN01LF-2309

Perfluoropentanoic acid	53.9	7.3	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.52 J	3.6	1.8	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	4.2 J	18	7.3	ng/l	EPA DRAFT 1633

FC9447-5 AF-RHMW02-WGFD01LF-2309

Perfluoropentanoic acid	49.0	8.2	2.1	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	0.83 J	4.1	2.1	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	4.3 J	21	8.2	ng/l	EPA DRAFT 1633

FC9447-6 AF-RHMW03-WGN01LF-2309

Perfluoropentanoic acid	4.4 J	7.4	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	5.9	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	2.6 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	0.91 J	3.7	0.93	ng/l	EPA DRAFT 1633
Perfluorododecanoic acid	0.89 J	3.7	1.9	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	25.6	19	7.4	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2309		
Lab Sample ID:	FC9447-1	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	6Q24389.D	1	09/13/23 03:35	MV	09/11/23 09:35	OP98930	S6Q350
Run #2							

Run #	Initial Volume	Final Volume
Run #1	570 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	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	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-RHMW16-WGN01LF-2309		
Lab Sample ID:	FC9447-1	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	74%	20-150%
13C5-PFPeA	73%	20-150%
13C5-PFHxA	81%	20-150%
13C4-PFHpA	84%	20-150%
13C8-PFOA	86%	20-150%
13C9-PFNA	97%	20-150%
13C6-PFDA	90%	20-150%
13C7-PFUnDA	82%	20-150%
13C2-PFDoDA	78%	20-150%
13C2-PFTeDA	71%	20-150%
13C3-PFBS	85%	20-150%
13C3-PFHxS	85%	20-150%

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 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-RHMW16-WGN01LF-2309	
Lab Sample ID:	FC9447-1	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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	71%		20-150%
	d3-MeFOSA	68%		20-150%
	d5-EtFOSA	73%		20-150%
	d3-MeFOSAA	73%		20-150%
	d5-EtFOSAA	61%		20-150%
	d7-MeFOSE	67%		20-150%
	d9-EtFOSE	72%		20-150%
	13C2-4:2FTS	83%		20-180%
	13C2-6:2FTS	81%		20-180%
	13C2-8:2FTS	79%		20-180%
	13C3-HFPO-DA	85%		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-2309		
Lab Sample ID:	FC9447-2	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	6Q24390.D	1	09/13/23 03:49	MV	09/11/23 09:35	OP98930	S6Q350
Run #2							

Run #	Initial Volume	Final Volume
Run #1	535 ml	5.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.5	1.9	0.88	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.57	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.47	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.7	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.7	3.7	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	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.8	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.7 U	7.5	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.5	3.7	0.93	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-WGN01LF-2309		
Lab Sample ID:	FC9447-2	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	4.7	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.7	3.7	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.5	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.5	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.5	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.5	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.5	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.73	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	44%		20-150%
	13C5-PFPeA	78%		20-150%
	13C5-PFHxA	86%		20-150%
	13C4-PFHpA	92%		20-150%
	13C8-PFOA	89%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	105%		20-150%
	13C7-PFUnDA	91%		20-150%
	13C2-PFDoDA	80%		20-150%
	13C2-PFTeDA	69%		20-150%
	13C3-PFBS	102%		20-150%
	13C3-PFHxS	97%		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-2309	
Lab Sample ID:	FC9447-2	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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	104%		20-150%
	13C8-FOSA	81%		20-150%
	d3-MeFOSA	74%		20-150%
	d5-EtFOSA	73%		20-150%
	d3-MeFOSAA	78%		20-150%
	d5-EtFOSAA	75%		20-150%
	d7-MeFOSE	64%		20-150%
	d9-EtFOSE	69%		20-150%
	13C2-4:2FTS	91%		20-180%
	13C2-6:2FTS	94%		20-180%
	13C2-8:2FTS	88%		20-180%
	13C3-HFPO-DA	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-WGFD01LF-2309		
Lab Sample ID:	FC9447-3	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	6Q24391.D	1	09/13/23 04:03	MV	09/11/23 09:35	OP98930	S6Q350
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-RHMW12A-WGFD01LF-2309	
Lab Sample ID:	FC9447-3	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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

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 carboxylate	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	47%	20-150%
13C5-PFPeA	83%	20-150%
13C5-PFHxA	90%	20-150%
13C4-PFHpA	93%	20-150%
13C8-PFOA	92%	20-150%
13C9-PFNA	106%	20-150%
13C6-PFDA	92%	20-150%
13C7-PFUnDA	87%	20-150%
13C2-PFDoDA	69%	20-150%
13C2-PFTeDA	64%	20-150%
13C3-PFBS	104%	20-150%
13C3-PFHxS	93%	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-2309	
Lab Sample ID:	FC9447-3	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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	89%		20-150%
	13C8-FOSA	84%		20-150%
	d3-MeFOSA	71%		20-150%
	d5-EtFOSA	71%		20-150%
	d3-MeFOSAA	75%		20-150%
	d5-EtFOSAA	71%		20-150%
	d7-MeFOSE	65%		20-150%
	d9-EtFOSE	70%		20-150%
	13C2-4:2FTS	95%		20-180%
	13C2-6:2FTS	91%		20-180%
	13C2-8:2FTS	91%		20-180%
	13C3-HFPO-DA	94%		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-RHMW02-WGN01LF-2309		
Lab Sample ID:	FC9447-4	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	6Q24395.D	1	09/13/23 05:01	MV	09/11/23 09:35	OP98930	S6Q350
Run #2							

Run #	Initial Volume	Final Volume
Run #1	550 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	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	53.9	7.3	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	0.52	3.6	1.8	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	0.91 U	3.6	0.91	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	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	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	0.64	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	0.52	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	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	4.2	18	7.3	3.2	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	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-RHMW02-WGN01LF-2309		
Lab Sample ID:	FC9447-4	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	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	4.0	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	0.91	ng/l
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	74%	20-150%
13C5-PFPeA	66%	20-150%
13C5-PFHxA	86%	20-150%
13C4-PFHpA	97%	20-150%
13C8-PFOA	85%	20-150%
13C9-PFNA	102%	20-150%
13C6-PFDA	94%	20-150%
13C7-PFUnDA	83%	20-150%
13C2-PFDoDA	71%	20-150%
13C2-PFTeDA	56%	20-150%
13C3-PFBS	96%	20-150%
13C3-PFHxS	96%	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-RHMW02-WGN01LF-2309	
Lab Sample ID:	FC9447-4	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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	88%		20-150%
	13C8-FOSA	85%		20-150%
	d3-MeFOSA	59%		20-150%
	d5-EtFOSA	54%		20-150%
	d3-MeFOSAA	83%		20-150%
	d5-EtFOSAA	71%		20-150%
	d7-MeFOSE	61%		20-150%
	d9-EtFOSE	60%		20-150%
	13C2-4:2FTS	87%		20-180%
	13C2-6:2FTS	79%		20-180%
	13C2-8:2FTS	75%		20-180%
	13C3-HFPO-DA	71%		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

4.5
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Client Sample ID:	AF-RHMW02-WGFD01LF-2309		
Lab Sample ID:	FC9447-5	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	6Q24397.D	1	09/13/23 05:29	MV	09/11/23 09:35	OP98930	S6Q350
Run #2							

Run #	Initial Volume	Final Volume
Run #1	485 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	4.1 U	16	4.1	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	49.0	8.2	2.1	0.97	ng/l	
307-24-4	Perfluorohexanoic acid	0.83	4.1	2.1	0.52	ng/l	J
375-85-9	Perfluoroheptanoic acid	2.1 U	4.1	2.1	0.52	ng/l	
335-67-1	Perfluorooctanoic acid	1.0 U	4.1	1.0	0.52	ng/l	
375-95-1	Perfluorononanoic acid	2.1 U	4.1	2.1	0.63	ng/l	
335-76-2	Perfluorodecanoic acid	2.1 U	4.1	2.1	0.52	ng/l	
2058-94-8	Perfluoroundecanoic acid	2.1 U	4.1	2.1	0.62	ng/l	
307-55-1	Perfluorododecanoic acid	2.1 U	4.1	2.1	0.62	ng/l	
72629-94-8	Perfluorotridecanoic acid	2.1 U	4.1	2.1	0.87	ng/l	
376-06-7	Perfluorotetradecanoic acid	2.1 U	4.1	2.1	0.52	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	2.1 U	4.1	2.1	0.52	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	4.1 U	5.2	4.1	1.2	ng/l	
355-46-4	Perfluorohexanesulfonic acid	2.1 U	4.1	2.1	0.72	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	2.1 U	4.1	2.1	0.52	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.1 U	4.1	2.1	0.56	ng/l	
68259-12-1	Perfluorononanesulfonic acid	2.1 U	4.1	2.1	0.59	ng/l	
335-77-3	Perfluorodecanesulfonic acid	2.1 U	4.1	2.1	0.66	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	4.1 U	5.2	4.1	1.2	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	8.2 U	21	8.2	3.3	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	4.3	21	8.2	3.6	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	8.2 U	21	8.2	4.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	2.1 U	4.1	2.1	0.69	ng/l	
31506-32-8	MeFOSA	4.1 U	8.2	4.1	1.0	ng/l	
4151-50-2	EtFOSA	4.1 U	8.2	4.1	1.0	ng/l	

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Report of Analysis

Client Sample ID:	AF-RHMW02-WGFD01LF-2309		
Lab Sample ID:	FC9447-5	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	4.1 U	5.2	4.1	1.0	ng/l	
2991-50-6	EtFOSAA	4.1 U	5.2	4.1	1.4	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	21 U	41	21	4.5	ng/l	
1691-99-2	EtFOSE	21 U	41	21	7.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	2.1 U	4.1	2.1	1.0	ng/l	
919005-14-4	ADONA	4.1 U	8.2	4.1	1.9	ng/l	
377-73-1	PFMPA	2.1 U	8.2	2.1	1.0	ng/l	
863090-89-5	PFMBA	4.1 U	8.2	4.1	1.2	ng/l	
151772-58-6	NFDHA	4.1 U	8.2	4.1	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	4.1 U	8.2	4.1	1.4	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	4.1 U	8.2	4.1	1.8	ng/l	
113507-82-7	PFEESA	2.1 U	8.2	2.1	0.80	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	10 U	21	10	4.7	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	21 U	100	21	9.0	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	21 U	100	21	8.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		20-150%
	13C5-PFPeA	70%		20-150%
	13C5-PFHxA	89%		20-150%
	13C4-PFHpA	99%		20-150%
	13C8-PFOA	90%		20-150%
	13C9-PFNA	110%		20-150%
	13C6-PFDA	91%		20-150%
	13C7-PFUnDA	76%		20-150%
	13C2-PFDoDA	63%		20-150%
	13C2-PFTeDA	55%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	103%		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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4

Report of Analysis

Client Sample ID:	AF-RHMW02-WGFD01LF-2309	
Lab Sample ID:	FC9447-5	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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	90%		20-150%
	d3-MeFOSA	66%		20-150%
	d5-EtFOSA	64%		20-150%
	d3-MeFOSAA	73%		20-150%
	d5-EtFOSAA	66%		20-150%
	d7-MeFOSE	68%		20-150%
	d9-EtFOSE	67%		20-150%
	13C2-4:2FTS	98%		20-180%
	13C2-6:2FTS	92%		20-180%
	13C2-8:2FTS	76%		20-180%
	13C3-HFPO-DA	77%		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-RHMW03-WGN01LF-2309		
Lab Sample ID:	FC9447-6	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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	6Q24398.D	1	09/13/23 05:44	MV	09/11/23 09:35	OP98930	S6Q350
Run #2							

Run #	Initial Volume	Final Volume
Run #1	540 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
---------	----------	--------	-----	-----	----	-------	---

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	4.4	7.4	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	5.9	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	2.6	3.7	1.9	0.46	ng/l	J
335-67-1	Perfluorooctanoic acid	0.91	3.7	0.93	0.46	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	0.89	3.7	1.9	0.56	ng/l	J
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	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	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	25.6	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	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

4.6
4

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2309		
Lab Sample ID:	FC9447-6	Date Sampled:	09/07/23
Matrix:	AQ - Ground Water	Date Received:	09/09/23
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
---------	----------	--------	-----	-----	----	-------	---

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		20-150%
	13C5-PFPeA	79%		20-150%
	13C5-PFHxA	88%		20-150%
	13C4-PFHpA	98%		20-150%
	13C8-PFOA	84%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	94%		20-150%
	13C7-PFUnDA	90%		20-150%
	13C2-PFDoDA	73%		20-150%
	13C2-PFTeDA	57%		20-150%
	13C3-PFBS	114%		20-150%
	13C3-PFHxS	94%		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

4.6
4

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2309	
Lab Sample ID:	FC9447-6	Date Sampled: 09/07/23
Matrix:	AQ - Ground Water	Date Received: 09/09/23
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	94%		20-150%
	13C8-FOSA	82%		20-150%
	d3-MeFOSA	57%		20-150%
	d5-EtFOSA	59%		20-150%
	d3-MeFOSAA	78%		20-150%
	d5-EtFOSAA	72%		20-150%
	d7-MeFOSE	68%		20-150%
	d9-EtFOSE	63%		20-150%
	13C2-4:2FTS	93%		20-180%
	13C2-6:2FTS	84%		20-180%
	13C2-8:2FTS	78%		20-180%
	13C3-HFPO-DA	86%		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

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FC9447

COC #: 2309AFSG05

SGS - ORLANDO JOB # :

PAGE 1 OF 1

SGS - ORLANDO Quote # SKIFF #

Client / Reporting Information		Project Information		Analytical Information										Matrix Codes			
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="position: absolute; top: 10px; right: 10px; border: 1px solid black; padding: 5px;"> CALL TO 303-796-4624 </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 # CTO CV123F0104															
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	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	INONE	ICCI	INCH	HN03	HP004	INCH/ZINC	DI WATER	MEDH		
2	AF-RHWW12A-WGN01LF-2309	9/7/23	0740	AK	GW	3		X								X	
3	AF-RHWW12A-WGFD01LF-2309	9/7/23	0740	AK	GW	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 UNITED ANWB: 016-92500822											
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	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 Anne Beppi / AECOM	9/7/23 145	2 Ellie Shimatsu AECOM	3 Ellie Shimatsu AECOM	9/7/23 145	4 UC	5 UC	6 UC	09/09/23 0845	7 UC	8 UC							

PFAS_COCs_ALL_09052023.xls Rev 031318

FC9447: Chain of Custody

Page 2 of 5



5.1
5



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FC9447

COC #: 2309AFSG01

SGS - ORLANDO JOB # :

PAGE 1 OF 1

Client / Reporting Information		Project Information		Analytical Information												Matrix Codes			
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 5px;">PFAS EPA Draft 1633</div> </div>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - 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 Project Manager: Watson Tanji Phone #: 303-796-4624 / 808-954-4512		Email: katie.abbott@aecom.com Email: watson.tanji@aecom.com															Project # 23F0104 - 60697810		Fax #
Sampler(s) Name(s) (Printed)		Client Purchase Order # 151253																	
Sampler 1: Chris Warrick		Sampler 2: <i>Miranda DeCarmon</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	ICI	NaOH	HNO3	H2SO4	MAO-H2NAC	DI WATER	MEDI				
4	AF-RHMW02-WGN01LF-2309	9/7/23	1045	<i>CW</i>	GW	3			X							X			
5	AF-RHMW02-WGFD01LF-2309	9/7/23	1045	<i>CW</i>	GW	3			X							X			
Turnaround Time (Business days)		Data Deliverable Information				Comments / Remarks													
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 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 AWD: 010-92500822											
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		Relinquished By/Affiliation	Date Time:	Received By/Affiliation					
1 <i>Tyler Nicholas AECOM</i>	9/7/23 1315	2 <i>Miranda DeCarmon/AECOM</i>		3 <i>Miranda DeCarmon/AECOM</i>	9/7/23 1450	4 <i>UC</i>		5 <i>UC</i>		6 <i>UC 09/09/23 0845</i>		7		8					
Lab Use Only : Cooler Temperature (s) Celsius (corrected):		http://www.sgs.com/en/terms-and-conditions																	

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FC9447: Chain of Custody

Page 3 of 5





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Chain of Custody

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FC9447

COC #: 2309AFSG02

SGS - ORLANDO JOB #:

PAGE 1 OF 1

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 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 CV123F0104															
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>Chris Watson</i> Sampler 2: <i>Tyler Nishikane</i>																	
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	INONE	INCI	INCH	INCO3	INCO4	INCH2NAC	DI WATER	MEDI	LAB USE ONLY	
60	AF-RHMW03-WGN01LF-2309	9/7/23	1340	<i>Chris Watson</i>	GW	3	X										
Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks													
10 Day (Business) 7 Day <input type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 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 <i>United Airlines</i> <i>Airway Bill: 016-92500822</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 1 <i>Tyler Nishikane AECOM</i>	Date Time: 9/7/23 1530	Received By/Affiliation 2 <i>Eli Martin AECOM</i>	Relinquished By/Affiliation 3 <i>Eli Martin AECOM</i>	Date Time: 9/7/23	Received By/Affiliation 4 <i>UC</i>												
Relinquished by/Affiliation 5 <i>UC</i>	Date Time:	Received By/Affiliation 6 <i>UC</i>	Relinquished By/Affiliation 7 <i>UC</i>	Date Time:	Received By/Affiliation 8 <i>UC</i>												

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FC9447: Chain of Custody

Page 4 of 5



5.1
5

QC Evaluation: DOD QSM5.x Limits

Job Number: FC9447
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 09/07/23

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 FC9447

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: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-IBLK	6Q24321.D	1	09/12/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

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	

Instrument Blank

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-IBLK	6Q24321.D	1	09/12/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

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	86% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	116% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	93% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	102% 20-150%
	d3-MeFOSAA	95% 20-150%
	d5-EtFOSAA	82% 20-150%
	13C2-4:2FTS	93% 20-180%
	13C2-6:2FTS	93% 20-180%
	13C2-8:2FTS	97% 20-180%

6.1.1

6

Continuing Calibration Blank

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-ICCB	6Q24383.D	1	09/13/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3

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: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-ICCB	6Q24383.D	1	09/13/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3

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	87% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	112% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	99% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	100% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	94% 20-150%
	13C8-PFOS	91% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSAA	89% 20-150%
	d5-EtFOSAA	79% 20-150%
	13C2-4:2FTS	93% 20-180%
	13C2-6:2FTS	89% 20-180%
	13C2-8:2FTS	90% 20-180%

Continuing Calibration Blank

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-ICCB	6Q24394.D	1	09/13/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-4, FC9447-5, FC9447-6

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: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-ICCB	6Q24394.D	1	09/13/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-4, FC9447-5, FC9447-6

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	88% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	104% 20-150%
	13C9-PFNA	109% 20-150%
	13C6-PFDA	100% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	108% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	90% 20-150%
	13C8-FOSA	95% 20-150%
	d3-MeFOSAA	88% 20-150%
	d5-EtFOSAA	78% 20-150%
	13C2-4:2FTS	96% 20-180%
	13C2-6:2FTS	93% 20-180%
	13C2-8:2FTS	94% 20-180%

Continuing Calibration Blank

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-ICCB	6Q24401.D	1	09/13/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-4, FC9447-5, FC9447-6

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: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q350-ICCB	6Q24401.D	1	09/13/23	MV	n/a	n/a	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-4, FC9447-5, FC9447-6

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	102% 20-150%
	13C5-PFPeA	85% 20-150%
	13C5-PFHxA	93% 20-150%
	13C4-PFHpA	97% 20-150%
	13C8-PFOA	94% 20-150%
	13C9-PFNA	106% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	103% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	111% 20-150%
	13C8-FOSA	107% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	100% 20-150%
	13C2-4:2FTS	103% 20-180%
	13C2-6:2FTS	100% 20-180%
	13C2-8:2FTS	96% 20-180%

Method Blank Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-MB	6Q24386.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

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: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-MB	6Q24386.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

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	92% 20-150%
	13C5-PFPeA	80% 20-150%
	13C5-PFHxA	88% 20-150%
	13C4-PFHpA	92% 20-150%
	13C8-PFOA	86% 20-150%
	13C9-PFNA	95% 20-150%
	13C6-PFDA	85% 20-150%
	13C7-PFUnDA	81% 20-150%
	13C2-PFDoDA	79% 20-150%
	13C2-PFTeDA	78% 20-150%
	13C3-PFBS	96% 20-150%
	13C3-PFHxS	92% 20-150%
	13C8-PFOS	79% 20-150%
	13C8-FOSA	63% 20-150%
	d3-MeFOSA	55% 20-150%
	d5-EtFOSA	60% 20-150%
	d3-MeFOSAA	77% 20-150%
	d5-EtFOSAA	67% 20-150%
	d7-MeFOSE	62% 20-150%
	d9-EtFOSE	68% 20-150%
	13C2-4:2FTS	91% 20-180%
	13C2-6:2FTS	90% 20-180%
	13C2-8:2FTS	79% 20-180%
	13C3-HFPO-DA	89% 20-150%

Blank Spike Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-LLBS	6Q24385.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0320	107	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0157	105	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0075	100	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0075	100	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0070	93	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0064	85	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0079	105	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0077	103	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0075	100	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0073	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0077	103	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0061	92	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0074	105	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0075	109	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0081	113	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0073	105	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0070	97	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0076	105	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0066	91	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0303	108	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0274	96	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0315	109	40-150
754-91-6	PFOSA	0.0075	0.0075	100	40-150
31506-32-8	MeFOSA	0.015	0.0153	102	40-150
4151-50-2	EtFOSA	0.015	0.0140	93	40-150
2355-31-9	MeFOSAA	0.0075	0.0079	105	40-150
2991-50-6	EtFOSAA	0.0075	0.0080	107	40-150
24448-09-7	MeFOSE	0.0375	0.0373	99	40-150
1691-99-2	EtFOSE	0.0375	0.0369	98	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0164	109	40-150
919005-14-4	ADONA	0.0142	0.0155	109	40-150
377-73-1	PFMPA	0.015	0.0168	112	40-150
863090-89-5	PFMBA	0.015	0.0169	113	40-150
151772-58-6	NFDHA	0.015	0.0159	106	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0148	106	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0141	99	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-LLBS	6Q24385.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0144	108	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0237	63	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.168	90	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.181	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	94%	20-150%
	13C5-PFPeA	80%	20-150%
	13C5-PFHxA	85%	20-150%
	13C4-PFHpA	93%	20-150%
	13C8-PFOA	90%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	99%	20-150%
	13C2-PFDoDA	93%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	97%	20-150%
	13C3-PFHxS	89%	20-150%
	13C8-PFOS	96%	20-150%
	13C8-FOSA	67%	20-150%
	d3-MeFOSA	68%	20-150%
	d5-EtFOSA	75%	20-150%
	d3-MeFOSAA	89%	20-150%
	d5-EtFOSAA	80%	20-150%
	d7-MeFOSE	66%	20-150%
	d9-EtFOSE	79%	20-150%
	13C2-4:2FTS	86%	20-180%
	13C2-6:2FTS	91%	20-180%
	13C2-8:2FTS	78%	20-180%
	13C3-HFPO-DA	87%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-BS	6Q24384.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.105	105	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0527	105	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0245	98	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0240	96	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0236	94	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0235	94	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0246	98	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0233	93	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0269	108	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0239	96	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0239	96	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0202	91	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0232	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0236	103	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0232	97	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0228	98	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0240	100	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0222	92	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0209	86	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0933	100	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.109	115	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0968	101	40-150
754-91-6	PFOSA	0.025	0.0257	103	40-150
31506-32-8	MeFOSA	0.05	0.0543	109	40-150
4151-50-2	EtFOSA	0.05	0.0494	99	40-150
2355-31-9	MeFOSAA	0.025	0.0238	95	40-150
2991-50-6	EtFOSAA	0.025	0.0277	111	40-150
24448-09-7	MeFOSE	0.125	0.124	99	40-150
1691-99-2	EtFOSE	0.125	0.122	98	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0527	105	40-150
919005-14-4	ADONA	0.0473	0.0525	111	40-150
377-73-1	PFMPA	0.05	0.0555	111	40-150
863090-89-5	PFMBA	0.05	0.0545	109	40-150
151772-58-6	NFDHA	0.05	0.0538	108	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0481	103	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0444	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-BS	6Q24384.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0473	106	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0802	64	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.587	94	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.690	110	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	99%	20-150%
	13C5-PFPeA	90%	20-150%
	13C5-PFHxA	93%	20-150%
	13C4-PFHpA	105%	20-150%
	13C8-PFOA	97%	20-150%
	13C9-PFNA	101%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	99%	20-150%
	13C2-PFDoDA	86%	20-150%
	13C2-PFTeDA	88%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	94%	20-150%
	13C8-FOSA	66%	20-150%
	d3-MeFOSA	61%	20-150%
	d5-EtFOSA	65%	20-150%
	d3-MeFOSAA	86%	20-150%
	d5-EtFOSAA	73%	20-150%
	d7-MeFOSE	63%	20-150%
	d9-EtFOSE	74%	20-150%
	13C2-4:2FTS	98%	20-180%
	13C2-6:2FTS	86%	20-180%
	13C2-8:2FTS	95%	20-180%
	13C3-HFPO-DA	97%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-MS	6Q24392.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350
FC9447-3	6Q24391.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	FC9447-3 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	0.0952	0.102	107	40-150
2706-90-3	Perfluoropentanoic acid	0.0076 U	0.0476	0.0543	114	40-150
307-24-4	Perfluorohexanoic acid	0.0038 U	0.0238	0.0226	95	40-150
375-85-9	Perfluoroheptanoic acid	0.0038 U	0.0238	0.0242	102	40-150
335-67-1	Perfluorooctanoic acid	0.0038 U	0.0238	0.0221	93	40-150
375-95-1	Perfluorononanoic acid	0.0038 U	0.0238	0.0191	80	40-150
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0238	0.0220	92	40-150
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0238	0.0270	113	40-150
307-55-1	Perfluorododecanoic acid	0.0038 U	0.0238	0.0244	102	40-150
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.0238	0.0206	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0238	0.0238	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	0.0211	0.0226	107	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0048 U	0.0224	0.0209	93	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	0.0218	0.0202	93	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U	0.0227	0.0211	93	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0038 U	0.0221	0.0211	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0038 U	0.0229	0.0237	103	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0038 U	0.023	0.0201	87	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0048 U	0.0231	0.0173	75	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	0.0893	0.0916	103	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U	0.0905	0.0954	105	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	0.0914	0.0835	91	40-150
754-91-6	PFOSA	0.0038 U	0.0238	0.0236	99	40-150
31506-32-8	MeFOSA	0.0076 U	0.0476	0.0519	109	40-150
4151-50-2	EtFOSA	0.0076 U	0.0476	0.0484	102	40-150
2355-31-9	MeFOSAA	0.0048 U	0.0238	0.0254	107	40-150
2991-50-6	EtFOSAA	0.0048 U	0.0238	0.0243	102	40-150
24448-09-7	MeFOSE	0.038 U	0.119	0.115	97	40-150
1691-99-2	EtFOSE	0.038 U	0.119	0.120	101	40-150
13252-13-6	HFPO-DA (GenX)	0.0038 U	0.0476	0.0479	101	40-150
919005-14-4	ADONA	0.0076 U	0.045	0.0475	106	40-150
377-73-1	PFMPA	0.0076 U	0.0476	0.0373	78	40-150
863090-89-5	PFMBA	0.0076 U	0.0476	0.0561	118	40-150
151772-58-6	NFDHA	0.0076 U	0.0476	0.0480	101	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0076 U	0.0445	0.0445	100	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0076 U	0.045	0.0401	89	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-MS	6Q24392.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350
FC9447-3	6Q24391.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	FC9447-3 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0076 U	0.0424	0.0444	105	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.119	0.222	186*	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.095 U	0.595	0.590	99	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.095 U	0.595	0.611	103	40-150

CAS No.	ID Standard Recoveries	MS	FC9447-3	Limits
	13C4-PFBA	30%	47%	20-150%
	13C5-PFPeA	73%	83%	20-150%
	13C5-PFHxA	85%	90%	20-150%
	13C4-PFHpA	90%	93%	20-150%
	13C8-PFOA	91%	92%	20-150%
	13C9-PFNA	115%	106%	20-150%
	13C6-PFDA	103%	92%	20-150%
	13C7-PFUnDA	83%	87%	20-150%
	13C2-PFDoDA	83%	69%	20-150%
	13C2-PFTeDA	78%	64%	20-150%
	13C3-PFBS	98%	104%	20-150%
	13C3-PFHxS	101%	93%	20-150%
	13C8-PFOS	97%	89%	20-150%
	13C8-FOSA	82%	84%	20-150%
	d3-MeFOSA	77%	71%	20-150%
	d5-EtFOSA	74%	71%	20-150%
	d3-MeFOSAA	82%	75%	20-150%
	d5-EtFOSAA	78%	71%	20-150%
	d7-MeFOSE	73%	65%	20-150%
	d9-EtFOSE	76%	70%	20-150%
	13C2-4:2FTS	88%	95%	20-180%
	13C2-6:2FTS	92%	91%	20-180%
	13C2-8:2FTS	88%	91%	20-180%
	13C3-HFPO-DA	86%	94%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-DUP	6Q24396.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350
FC9447-4	6Q24395.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	FC9447-4 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	0.0539	0.0524	3		30
307-24-4	Perfluorohexanoic acid	0.0036 U	ND	nc		30
375-85-9	Perfluoroheptanoic acid	0.00052 J	0.00067 J	25		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	0.0042 J	0.0039 J	7		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	0.0073 U	ND	nc		30
4151-50-2	EtFOSA	0.0073 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	0.0073 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: FC9447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98930-DUP	6Q24396.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350
FC9447-4	6Q24395.D	1	09/13/23	MV	09/11/23	OP98930	S6Q350

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC9447-1, FC9447-2, FC9447-3, FC9447-4, FC9447-5, FC9447-6

CAS No.	Compound	FC9447-4 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	0.091 U	ND	nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.091 U	ND	nc	30

CAS No.	ID Standard Recoveries	DUP	FC9447-4	Limits
	13C4-PFBA	76%	74%	20-150%
	13C5-PFPeA	72%	66%	20-150%
	13C5-PFHxA	88%	86%	20-150%
	13C4-PFHpA	96%	97%	20-150%
	13C8-PFOA	95%	85%	20-150%
	13C9-PFNA	102%	102%	20-150%
	13C6-PFDA	92%	94%	20-150%
	13C7-PFUnDA	89%	83%	20-150%
	13C2-PFDoDA	79%	71%	20-150%
	13C2-PFTeDA	57%	56%	20-150%
	13C3-PFBS	91%	96%	20-150%
	13C3-PFHxS	87%	96%	20-150%
	13C8-PFOS	83%	88%	20-150%
	13C8-FOSA	78%	85%	20-150%
	d3-MeFOSA	58%	59%	20-150%
	d5-EtFOSA	60%	54%	20-150%
	d3-MeFOSAA	71%	83%	20-150%
	d5-EtFOSAA	67%	71%	20-150%
	d7-MeFOSE	61%	61%	20-150%
	d9-EtFOSE	64%	60%	20-150%
	13C2-4:2FTS	82%	87%	20-180%
	13C2-6:2FTS	73%	79%	20-180%
	13C2-8:2FTS	72%	75%	20-180%
	13C3-HFPO-DA	76%	71%	20-150%

* = Outside of Control Limits.