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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC2447

Sampling Date: 02/02/23



Report to:

AECOM, Inc
7595 Technology Way
Denver, CO 80237
katie.abbott@aecom.com; mark.kromis@aecom.com;
watson.tanji@aecom.com; kristin.rutherford@aecom.com
ATTN: Katie Abbott

Total number of pages in report: 34



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.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC2447

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC2447-1	02/02/23	10:20	MYNT02/04/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2301W5
FC2447-2	02/02/23	12:10	MYNT02/04/23	AQ	Ground Water	AF-RHMW225401-WGN01B-2301W5
FC2447-3	02/02/23	09:15	MYNT02/04/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2301W5
FC2447-4	02/02/23	11:15	MYNT02/04/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2301W5

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC2447

Site: N6274223F0104 RH Fire Suppression System

Report Date: 2/20/2023 7:57:10 PM

On 02/04/2023, 3 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 3.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2447 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: OP95376

Sample(s) FC2447-IMS were used as the QC samples indicated.

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

Narrative prepared by:

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

Summary of Hits

Job Number: FC2447
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/02/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC2447-1 AF-RHMW16-WGN01LF-2301W5

No hits reported in this sample.

FC2447-3 AF-RHMW04-WGN01LF-2301W5

No hits reported in this sample.

FC2447-4 AF-RHMW06-WGN01LF-2301W5

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2301W5		
Lab Sample ID:	FC2447-1	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
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	6Q13743.D	1	02/16/23 11:48	MV	02/08/23 09:00	OP95376	S6Q208
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	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.4	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.7	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.94 U	4.7	0.94	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	4.7	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.7	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.7	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.7	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	4.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	1.9 U	4.7	1.9	0.94	ng/l	
4151-50-2	EtFOSA	1.9 U	4.7	1.9	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

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Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2301W5		
Lab Sample ID:	FC2447-1	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
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	9.4 U	47	9.4	4.1	ng/l	
1691-99-2	EtFOSE	19 U	47	19	7.0	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.94	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.4	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	9.4	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.4	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.4	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	24	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	112%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	98%		20-150%
	13C4-PFHpA	101%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	91%		20-150%
	13C6-PFDA	87%		20-150%
	13C7-PFUnDA	81%		20-150%
	13C2-PFDoDA	71%		20-150%
	13C2-PFTeDA	71%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	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

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2301W5	
Lab Sample ID:	FC2447-1	Date Sampled: 02/02/23
Matrix:	AQ - Ground Water	Date Received: 02/04/23
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	92%		20-150%
	13C8-FOSA	92%		20-150%
	d3-MeFOSA	90%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	93%		20-150%
	d5-EtFOSAA	90%		20-150%
	d7-MeFOSE	94%		20-150%
	d9-EtFOSE	91%		20-150%
	13C2-4:2FTS	119%		20-150%
	13C2-6:2FTS	109%		20-150%
	13C2-8:2FTS	104%		20-150%
	13C3-HFPO-DA	121%		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-RHMW04-WGN01LF-2301W5		
Lab Sample ID:	FC2447-3	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
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	6Q13747.D	1	02/16/23 12:44	MV	02/08/23 09:00	OP95376	S6Q208
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	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	9.1	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.91 U	4.5	0.91	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	4.5	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	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	7.3 U	18	7.3	3.2	ng/l	
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	4.5	1.8	0.61	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.91	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	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

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Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2301W5		
Lab Sample ID:	FC2447-3	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.1 U	45	9.1	4.0	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.7	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.91	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	9.1	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	9.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	9.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	18	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	18	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	9.1	1.8	0.71	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	23	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	112%		20-150%
	13C5-PFPeA	103%		20-150%
	13C5-PFHxA	96%		20-150%
	13C4-PFHpA	97%		20-150%
	13C8-PFOA	100%		20-150%
	13C9-PFNA	86%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	98%		20-150%
	13C2-PFDoDA	89%		20-150%
	13C2-PFTeDA	91%		20-150%
	13C3-PFBS	95%		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-RHMW04-WGN01LF-2301W5		Date Sampled:	02/02/23
Lab Sample ID:	FC2447-3		Date Received:	02/04/23
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	89%		20-150%
	13C8-FOSA	93%		20-150%
	d3-MeFOSA	105%		20-150%
	d5-EtFOSA	96%		20-150%
	d3-MeFOSAA	93%		20-150%
	d5-EtFOSAA	92%		20-150%
	d7-MeFOSE	111%		20-150%
	d9-EtFOSE	103%		20-150%
	13C2-4:2FTS	119%		20-150%
	13C2-6:2FTS	106%		20-150%
	13C2-8:2FTS	103%		20-150%
	13C3-HFPO-DA	114%		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-RHMW06-WGN01LF-2301W5		
Lab Sample ID:	FC2447-4	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
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	6Q13748.D	1	02/16/23 12:58	MV	02/08/23 09:00	OP95376	S6Q208
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	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.4	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.7	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.94 U	4.7	0.94	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	4.7	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.7	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.7	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.7	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	4.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	1.9 U	4.7	1.9	0.94	ng/l	
4151-50-2	EtFOSA	1.9 U	4.7	1.9	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-RHMW06-WGN01LF-2301W5		
Lab Sample ID:	FC2447-4	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
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	9.4 U	47	9.4	4.1	ng/l	
1691-99-2	EtFOSE	19 U	47	19	7.0	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.94	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.4	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	9.4	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.4	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.4	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	24	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	108%		20-150%
	13C5-PFPeA	107%		20-150%
	13C5-PFHxA	100%		20-150%
	13C4-PFHpA	96%		20-150%
	13C8-PFOA	89%		20-150%
	13C9-PFNA	92%		20-150%
	13C6-PFDA	87%		20-150%
	13C7-PFUnDA	87%		20-150%
	13C2-PFDoDA	78%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	105%		20-150%
	13C3-PFHxS	99%		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-RHMW06-WGN01LF-2301W5		
Lab Sample ID:	FC2447-4	Date Sampled:	02/02/23
Matrix:	AQ - Ground Water	Date Received:	02/04/23
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	101%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	96%		20-150%
	d5-EtFOSAA	93%		20-150%
	d7-MeFOSE	108%		20-150%
	d9-EtFOSE	105%		20-150%
	13C2-4:2FTS	113%		20-150%
	13C2-6:2FTS	117%		20-150%
	13C2-8:2FTS	104%		20-150%
	13C3-HFPO-DA	116%		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 Sample Receipt Summary

Job Number: FC2447

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/4/2023 2:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-84609512

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0);

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

Cooler Information

Y or N

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

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N N/A

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

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____
 Test Strip Lot #: pH 0-3 230315
 Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____
 pH 10-12 219813A

Number of Lab Filtered Metals: _____
 Other: (Specify) _____

Comments

SM001
Rev. Date 05/24/17

Technician: ZANEB

Date: 2/4/2023 2:00:00 PM

Reviewer: NS

Date: 2/9/2023

FC2447: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC2447
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/02/23

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

* Sample used for QC is not from job FC2447

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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: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q208-IBLK	6Q13735.D	1	02/16/23	MV	n/a	n/a	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	0.0012	0.0050	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0024	0.0050	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	0.0165	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0250	0.050	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q208-IBLK	6Q13735.D	1	02/16/23	MV	n/a	n/a	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	112% 20-150%
	13C5-PFPeA	114% 20-150%
	13C5-PFHxA	110% 20-150%
	13C4-PFHpA	114% 20-150%
	13C8-PFOA	110% 20-150%
	13C9-PFNA	104% 20-150%
	13C6-PFDA	108% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	109% 20-150%
	13C3-PFBS	120% 20-150%
	13C3-PFHxS	119% 20-150%
	13C8-PFOS	119% 20-150%
	13C8-FOSA	112% 20-150%
	d3-MeFOSA	107% 20-150%
	d5-EtFOSA	109% 20-150%
	d3-MeFOSAA	114% 20-150%
	d5-EtFOSAA	115% 20-150%
	d7-MeFOSE	114% 20-150%
	d9-EtFOSE	108% 20-150%
	13C2-4:2FTS	119% 20-150%
	13C2-6:2FTS	129% 20-150%
	13C2-8:2FTS	131% 20-150%
	13C3-HFPO-DA	114% 20-150%

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Method Blank Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-MB	6Q13742.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-MB	6Q13742.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	110% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	89% 20-150%
	13C4-PFHpA	97% 20-150%
	13C8-PFOA	104% 20-150%
	13C9-PFNA	95% 20-150%
	13C6-PFDA	96% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	92% 20-150%
	13C2-PFTeDA	86% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	98% 20-150%
	13C8-PFOS	119% 20-150%
	13C8-FOSA	103% 20-150%
	d3-MeFOSA	107% 20-150%
	d5-EtFOSA	107% 20-150%
	d3-MeFOSAA	120% 20-150%
	d5-EtFOSAA	113% 20-150%
	d7-MeFOSE	124% 20-150%
	d9-EtFOSE	126% 20-150%
	13C2-4:2FTS	115% 20-150%
	13C2-6:2FTS	105% 20-150%
	13C2-8:2FTS	97% 20-150%
	13C3-HFPO-DA	109% 20-150%

Blank Spike Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-LLBS	6Q13741.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0336	84	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0179	90	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0094	94	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0094	94	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0097	97	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0102	102	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0096	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0091	91	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0093	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0092	92	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0100	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0083	94	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0094	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0091	100	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0100	105	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0095	102	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0101	105	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0102	106	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0092	95	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0336	90	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0355	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0436	114	40-150
754-91-6	PFOSA	0.01	0.0098	98	40-150
31506-32-8	MeFOSA	0.01	0.0085	85	40-150
4151-50-2	EtFOSA	0.01	0.0082	82	40-150
2355-31-9	MeFOSAA	0.01	0.0096	96	40-150
2991-50-6	EtFOSAA	0.01	0.0091	91	40-150
24448-09-7	MeFOSE	0.1	0.0796	80	40-150
1691-99-2	EtFOSE	0.1	0.0815	82	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0332	83	40-150
919005-14-4	ADONA	0.0378	0.0311	82	40-150
377-73-1	PFMPA	0.02	0.0190	95	40-150
863090-89-5	PFMBA	0.02	0.0190	95	40-150
151772-58-6	NFDHA	0.02	0.0215	108	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0313	84	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0292	77	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-LLBS	6Q13741.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0183	103	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0413	83	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.243	97	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.242	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	113%	20-150%
	13C5-PFPeA	109%	20-150%
	13C5-PFHxA	103%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	98%	20-150%
	13C9-PFNA	97%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	89%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	97%	20-150%
	13C8-PFOS	93%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSA	96%	20-150%
	d5-EtFOSA	94%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	104%	20-150%
	d7-MeFOSE	107%	20-150%
	d9-EtFOSE	104%	20-150%
	13C2-4:2FTS	114%	20-150%
	13C2-6:2FTS	112%	20-150%
	13C2-8:2FTS	100%	20-150%
	13C3-HFPO-DA	121%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-BS	6Q13740.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0878	88	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0468	94	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0250	100	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0241	96	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0246	98	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0273	109	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0276	110	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0282	113	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0247	99	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0260	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0250	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0221	100	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0233	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0229	100	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0244	102	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0231	100	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0244	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0254	105	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0219	90	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0868	93	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0898	95	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0914	95	40-150
754-91-6	PFOSA	0.025	0.0268	107	40-150
31506-32-8	MeFOSA	0.025	0.0204	82	40-150
4151-50-2	EtFOSA	0.025	0.0202	81	40-150
2355-31-9	MeFOSAA	0.025	0.0258	103	40-150
2991-50-6	EtFOSAA	0.025	0.0203	81	40-150
24448-09-7	MeFOSE	0.25	0.213	85	40-150
1691-99-2	EtFOSE	0.25	0.223	89	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0717	72	40-150
919005-14-4	ADONA	0.0945	0.0724	77	40-150
377-73-1	PFMPA	0.05	0.0271	54	40-150
863090-89-5	PFMBA	0.05	0.0491	98	40-150
151772-58-6	NFDHA	0.05	0.0505	101	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0705	75	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0690	73	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-BS	6Q13740.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0465	104	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0932	75	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.620	99	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.621	99	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	27%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	100%	20-150%
	13C4-PFHpA	100%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	89%	20-150%
	13C6-PFDA	89%	20-150%
	13C7-PFUnDA	90%	20-150%
	13C2-PFDoDA	93%	20-150%
	13C2-PFTeDA	86%	20-150%
	13C3-PFBS	96%	20-150%
	13C3-PFHxS	94%	20-150%
	13C8-PFOS	97%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	111%	20-150%
	d5-EtFOSA	109%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	110%	20-150%
	d7-MeFOSE	109%	20-150%
	d9-EtFOSE	105%	20-150%
	13C2-4:2FTS	115%	20-150%
	13C2-6:2FTS	110%	20-150%
	13C2-8:2FTS	100%	20-150%
	13C3-HFPO-DA	127%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-MS	6Q13744.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208
FC2447-1	6Q13743.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	FC2447-1 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.019 U	0.0926	0.0817	88	40-150
2706-90-3	Perfluoropentanoic acid	0.0094 U	0.0463	0.0432	93	40-150
307-24-4	Perfluorohexanoic acid	0.0047 U	0.0231	0.0228	98	40-150
375-85-9	Perfluoroheptanoic acid	0.0047 U	0.0231	0.0231	100	40-150
335-67-1	Perfluorooctanoic acid	0.0047 U	0.0231	0.0216	93	40-150
375-95-1	Perfluorononanoic acid	0.0047 U	0.0231	0.0243	105	40-150
335-76-2	Perfluorodecanoic acid	0.0047 U	0.0231	0.0259	112	40-150
2058-94-8	Perfluoroundecanoic acid	0.0047 U	0.0231	0.0232	100	40-150
307-55-1	Perfluorododecanoic acid	0.0047 U	0.0231	0.0224	97	40-150
72629-94-8	Perfluorotridecanoic acid	0.0047 U	0.0231	0.0239	103	40-150
376-06-7	Perfluorotetradecanoic acid	0.0047 U	0.0231	0.0235	102	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0047 U	0.0205	0.0199	97	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0047 U	0.0218	0.0219	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0047 U	0.0212	0.0218	103	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0047 U	0.0221	0.0248	112	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0047 U	0.0215	0.0235	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0047 U	0.0223	0.0234	105	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0047 U	0.0223	0.0219	98	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0047 U	0.0225	0.0214	95	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	0.0868	0.0818	94	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U	0.088	0.0883	100	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	0.0889	0.0959	108	40-150
754-91-6	PFOSA	0.0047 U	0.0231	0.0237	102	40-150
31506-32-8	MeFOSA	0.0047 U	0.0231	0.0198	86	40-150
4151-50-2	EtFOSA	0.0047 U	0.0231	0.0189	82	40-150
2355-31-9	MeFOSAA	0.0047 U	0.0231	0.0226	98	40-150
2991-50-6	EtFOSAA	0.0047 U	0.0231	0.0212	92	40-150
24448-09-7	MeFOSE	0.047 U	0.231	0.175	76	40-150
1691-99-2	EtFOSE	0.047 U	0.231	0.197	85	40-150
13252-13-6	HFPO-DA (GenX)	0.019 U	0.0926	0.0771	83	40-150
919005-14-4	ADONA	0.019 U	0.0875	0.0749	86	40-150
377-73-1	PFMPA	0.0094 U	0.0463	0.0435	94	40-150
863090-89-5	PFMBA	0.0094 U	0.0463	0.0434	94	40-150
151772-58-6	NFDHA	0.0094 U	0.0463	0.0465	100	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.019 U	0.0866	0.0676	78	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.019 U	0.0875	0.0634	72	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2447
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95376-MS	6Q13744.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208
FC2447-1	6Q13743.D	1	02/16/23	MV	02/08/23	OP95376	S6Q208

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2447-1, FC2447-3, FC2447-4

CAS No.	Compound	FC2447-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0094 U	0.0412	0.0422	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.024 U	0.116	0.103	89	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.12 U	0.579	0.589	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.12 U	0.579	0.573	99	40-150

CAS No.	ID Standard Recoveries	MS	FC2447-1	Limits
	13C4-PFBA	78%	112%	20-150%
	13C5-PFPeA	138%	109%	20-150%
	13C5-PFHxA	129%	98%	20-150%
	13C4-PFHpA	128%	101%	20-150%
	13C8-PFOA	130%	106%	20-150%
	13C9-PFNA	109%	91%	20-150%
	13C6-PFDA	115%	87%	20-150%
	13C7-PFUnDA	115%	81%	20-150%
	13C2-PFDoDA	106%	71%	20-150%
	13C2-PFTeDA	109%	71%	20-150%
	13C3-PFBS	134%	108%	20-150%
	13C3-PFHxS	130%	101%	20-150%
	13C8-PFOS	108%	92%	20-150%
	13C8-FOSA	117%	92%	20-150%
	d3-MeFOSA	128%	90%	20-150%
	d5-EtFOSA	128%	95%	20-150%
	d3-MeFOSAA	123%	93%	20-150%
	d5-EtFOSAA	119%	90%	20-150%
	d7-MeFOSE	138%	94%	20-150%
	d9-EtFOSE	127%	91%	20-150%
	13C2-4:2FTS	148%	119%	20-150%
	13C2-6:2FTS	139%	109%	20-150%
	13C2-8:2FTS	128%	104%	20-150%
	13C3-HFPO-DA	154%* a	121%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.