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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC3096

Sampling Date: 02/28/23



Report to:

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Total number of pages in report: 33



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

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.

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Sample Summary

AECOM, INC.

Job No: FC3096

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC3096-1	02/28/23	09:40 ZD	03/01/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2302W4
FC3096-2	02/28/23	09:40 ZD	03/01/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2302W4
FC3096-3	02/28/23	12:20 EM	03/01/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2302W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC3096

Site: N6274223F0104 RH Fire Suppression System

Report Date: 3/9/2023 10:01:53 AM

On 03/01/2023, 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 FC3096 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: OP95719

Sample(s) FC3096-1MS, FC3096-2DUP 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: FC3096
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/28/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC3096-1 **AF-RHMW12A-WGN01LF-2302W4**

Perfluoropentanoic acid	5.5 J	8.9	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.6 J	4.5	0.89	ng/l	EPA DRAFT 1633

FC3096-2 **AF-RHMW12A-WGFD01LF-2302W4**

Perfluoropentanoic acid	5.0 J	8.9	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.4 J	4.5	0.89	ng/l	EPA DRAFT 1633

FC3096-3 **AF-RHMW16-WGN01LF-2302W4**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2302W4		
Lab Sample ID:	FC3096-1	Date Sampled:	02/28/23
Matrix:	AQ - Ground Water	Date Received:	03/01/23
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	4Q41712.D	1	03/06/23 18:55	MV	03/03/23 15:45	OP95719	S4Q597
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 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	5.5	8.9	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	1.6	4.5	0.89	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.89 U	4.5	0.89	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	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.89 U	4.5	0.89	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.57	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	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	4.5	1.8	0.60	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.89	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.89	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2302W4		
Lab Sample ID:	FC3096-1	Date Sampled:	02/28/23
Matrix:	AQ - Ground Water	Date Received:	03/01/23
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	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.9 U	45	8.9	3.9	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.89	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	8.9	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	8.9	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	8.9	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	1.2	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	8.9	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	22	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	43%		20-150%
	13C5-PFPeA	91%		20-150%
	13C5-PFHxA	99%		20-150%
	13C4-PFHpA	93%		20-150%
	13C8-PFOA	88%		20-150%
	13C9-PFNA	90%		20-150%
	13C6-PFDA	91%		20-150%
	13C7-PFUnDA	84%		20-150%
	13C2-PFDoDA	77%		20-150%
	13C2-PFTeDA	76%		20-150%
	13C3-PFBS	94%		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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2302W4		
Lab Sample ID:	FC3096-1	Date Sampled:	02/28/23
Matrix:	AQ - Ground Water	Date Received:	03/01/23
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	85%		20-150%
	13C8-FOSA	82%		20-150%
	d3-MeFOSA	75%		20-150%
	d5-EtFOSA	73%		20-150%
	d3-MeFOSAA	71%		20-150%
	d5-EtFOSAA	70%		20-150%
	d7-MeFOSE	68%		20-150%
	d9-EtFOSE	71%		20-150%
	13C2-4:2FTS	88%		20-150%
	13C2-6:2FTS	80%		20-150%
	13C2-8:2FTS	88%		20-150%
	13C3-HFPO-DA	112%		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-2302W4		
Lab Sample ID:	FC3096-2	Date Sampled:	02/28/23
Matrix:	AQ - Ground Water	Date Received:	03/01/23
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	4Q41714.D	1	03/06/23 19:23	MV	03/03/23 15:45	OP95719	S4Q597
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 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	5.0	8.9	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	1.4	4.5	0.89	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.89 U	4.5	0.89	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	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.89 U	4.5	0.89	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.57	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	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	4.5	1.8	0.60	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.89	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.89	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-RHMW12A-WGFD01LF-2302W4	
Lab Sample ID:	FC3096-2	Date Sampled: 02/28/23
Matrix:	AQ - Ground Water	Date Received: 03/01/23
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	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.9 U	45	8.9	3.9	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.89	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	8.9	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	8.9	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	8.9	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	1.2	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	8.9	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	22	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	46%		20-150%
	13C5-PFPeA	95%		20-150%
	13C5-PFHxA	102%		20-150%
	13C4-PFHpA	98%		20-150%
	13C8-PFOA	92%		20-150%
	13C9-PFNA	94%		20-150%
	13C6-PFDA	96%		20-150%
	13C7-PFUnDA	86%		20-150%
	13C2-PFDoDA	75%		20-150%
	13C2-PFTeDA	76%		20-150%
	13C3-PFBS	93%		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-RHMW12A-WGFD01LF-2302W4	
Lab Sample ID:	FC3096-2	Date Sampled: 02/28/23
Matrix:	AQ - Ground Water	Date Received: 03/01/23
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	82%		20-150%
	13C8-FOSA	90%		20-150%
	d3-MeFOSA	84%		20-150%
	d5-EtFOSA	80%		20-150%
	d3-MeFOSAA	76%		20-150%
	d5-EtFOSAA	71%		20-150%
	d7-MeFOSE	71%		20-150%
	d9-EtFOSE	76%		20-150%
	13C2-4:2FTS	90%		20-150%
	13C2-6:2FTS	83%		20-150%
	13C2-8:2FTS	82%		20-150%
	13C3-HFPO-DA	117%		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-2302W4		
Lab Sample ID:	FC3096-3	Date Sampled:	02/28/23
Matrix:	AQ - Ground Water	Date Received:	03/01/23
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	4Q41716.D	1	03/06/23 19:51	MV	03/03/23 15:45	OP95719	S4Q597
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	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.5	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	0.95 U	4.8	0.95	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	0.95 U	4.8	0.95	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.95 U	4.8	0.95	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	0.95 U	4.8	0.95	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.8	1.9	0.80	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.95 U	4.8	0.95	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.95 U	4.8	0.95	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	4.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.95 U	4.8	0.95	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.8	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	4.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	1.9 U	4.8	1.9	0.95	ng/l	
4151-50-2	EtFOSA	1.9 U	4.8	1.9	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-RHMW16-WGN01LF-2302W4		
Lab Sample ID:	FC3096-3	Date Sampled:	02/28/23
Matrix:	AQ - Ground Water	Date Received:	03/01/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.8 U	4.8	3.8	0.95	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.5 U	48	9.5	4.2	ng/l	
1691-99-2	EtFOSE	19 U	48	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.95	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.5	1.9	0.95	ng/l	
863090-89-5	PFMBA	3.8 U	9.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.5	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	9.5	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.5 U	24	9.5	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.3	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	100%		20-150%
	13C5-PFPeA	97%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	100%		20-150%
	13C8-PFOA	101%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	100%		20-150%
	13C7-PFUnDA	96%		20-150%
	13C2-PFDoDA	91%		20-150%
	13C2-PFTeDA	91%		20-150%
	13C3-PFBS	99%		20-150%
	13C3-PFHxS	111%		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-2302W4		Date Sampled:	02/28/23
Lab Sample ID:	FC3096-3		Date Received:	03/01/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	88%		20-150%
	13C8-FOSA	91%		20-150%
	d3-MeFOSA	89%		20-150%
	d5-EtFOSA	94%		20-150%
	d3-MeFOSAA	79%		20-150%
	d5-EtFOSAA	86%		20-150%
	d7-MeFOSE	82%		20-150%
	d9-EtFOSE	91%		20-150%
	13C2-4:2FTS	107%		20-150%
	13C2-6:2FTS	97%		20-150%
	13C2-8:2FTS	95%		20-150%
	13C3-HFPO-DA	120%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando
Chain of Custody

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

FC3096
SGS - ORLANDO JOB #:

CDC #: 2302W4AFSG05
PAGE 1 OF 1

Client / Reporting Information			Project Information			SGS - ORLANDO Quote #													SKIFF #
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			Analytical Information													Matrix Codes
Address: 1001 Bishop St. ste 1600			Street			<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PFAS EPA Draft 1633</div> <div style="font-size: 2em; font-weight: bold;">X</div> </div>													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
City: Honolulu State: HI Zip: 96813		City: Honolulu State: Hawaii		Project # 60697810															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #															
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #																	
Sampler(s) Name(s) (Printed) Sampler 1: <u>Zoe Dierna</u> Sampler 2:			COLLECTION			CONTAINER INFORMATION													
SGS Orlando Sample #	Field ID / Point of Collection		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH-ZINC	DI WATER	MEDIH	PFAS EPA Draft 1633	LAB USE ONLY	
1	AF-RHMW12A-WGN01LF-2302W4		2/28/23	0940	ZD	GW	3	X									X		
2	AF-RHMW12A-WGFD01LF-2302W4		2/28/23	0940	ZD	GW	3	X									X		
INITIAL ASSESSMENT LABEL VERIFICATION																			
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 AWB 016-12909050							
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				
1 Zoe Dierna/Aecom			2/28/23			2 [Signature] Aecom			3 [Signature] Aecom			2/28/23			4 [Signature] Aecom				
Relinquished by/Affiliation			Date Time:			Received By/Affiliation			Relinquished By/Affiliation			Date Time:			Received By/Affiliation				
5			6			7			7			8			8				
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <u>3.02</u> http://www.sgs.com/en/terms-and-conditions																			

PFAS_COCs_ALL.xls Rev 031318

FC3096: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC3096

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 3/1/2023 2:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-12909050

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 _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #: pH 0-3 230315

pH 10-12 219813A

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 3/1/2023 2:00:00 PM

Reviewer: CD

Date: 3/3/2023

FC3096: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC3096
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/28/23

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 FC3096

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: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q597-IBLK	4Q41706.D	1	03/06/23	MV	n/a	n/a	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

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	

Instrument Blank

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q597-IBLK	4Q41706.D	1	03/06/23	MV	n/a	n/a	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

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	104%	20-150%
	13C5-PFPeA	99%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	100%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	97%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	91%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	99%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSA	112%	20-150%
	d5-EtFOSA	116%	20-150%
	d3-MeFOSAA	90%	20-150%
	d5-EtFOSAA	88%	20-150%
	d7-MeFOSE	94%	20-150%
	d9-EtFOSE	106%	20-150%
	13C2-4:2FTS	86%	20-150%
	13C2-6:2FTS	84%	20-150%
	13C2-8:2FTS	91%	20-150%
	13C3-HFPO-DA	124%	20-150%

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Method Blank Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-MB	4Q41711.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

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: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-MB	4Q41711.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

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	107% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	104% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	98% 20-150%
	13C9-PFNA	99% 20-150%
	13C6-PFDA	106% 20-150%
	13C7-PFUnDA	102% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	108% 20-150%
	13C8-PFOS	89% 20-150%
	13C8-FOSA	89% 20-150%
	d3-MeFOSA	91% 20-150%
	d5-EtFOSA	93% 20-150%
	d3-MeFOSAA	85% 20-150%
	d5-EtFOSAA	85% 20-150%
	d7-MeFOSE	84% 20-150%
	d9-EtFOSE	94% 20-150%
	13C2-4:2FTS	101% 20-150%
	13C2-6:2FTS	99% 20-150%
	13C2-8:2FTS	100% 20-150%
	13C3-HFPO-DA	117% 20-150%

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Blank Spike Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-LLBS	4Q41710.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0442	111	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0234	117	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0110	110	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0110	110	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0112	112	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0108	108	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0123	123	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0114	114	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0115	115	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0112	112	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0109	109	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0107	121	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0098	104	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0097	106	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0097	102	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0101	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0123	128	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0105	109	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0112	115	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0398	106	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0448	118	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0450	117	40-150
754-91-6	PFOSA	0.01	0.0106	106	40-150
31506-32-8	MeFOSA	0.01	0.0101	101	40-150
4151-50-2	EtFOSA	0.01	0.0103	103	40-150
2355-31-9	MeFOSAA	0.01	0.0105	105	40-150
2991-50-6	EtFOSAA	0.01	0.0112	112	40-150
24448-09-7	MeFOSE	0.1	0.110	110	40-150
1691-99-2	EtFOSE	0.1	0.111	111	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0412	103	40-150
919005-14-4	ADONA	0.0378	0.0381	101	40-150
377-73-1	PFMPA	0.02	0.0242	121	40-150
863090-89-5	PFMBA	0.02	0.0235	118	40-150
151772-58-6	NFDHA	0.02	0.0274	137	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0367	98	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0367	97	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-LLBS	4Q41710.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0194	109	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0576	115	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.283	113	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.278	111	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	110%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	108%	20-150%
	13C4-PFHpA	105%	20-150%
	13C8-PFOA	105%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	93%	20-150%
	13C3-PFBS	97%	20-150%
	13C3-PFHxS	105%	20-150%
	13C8-PFOS	89%	20-150%
	13C8-FOSA	91%	20-150%
	d3-MeFOSA	90%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	84%	20-150%
	d5-EtFOSAA	83%	20-150%
	d7-MeFOSE	88%	20-150%
	d9-EtFOSE	95%	20-150%
	13C2-4:2FTS	97%	20-150%
	13C2-6:2FTS	92%	20-150%
	13C2-8:2FTS	90%	20-150%
	13C3-HFPO-DA	127%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-BS	4Q41709.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.123	123	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0674	135	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0309	124	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0317	127	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0329	132	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0323	129	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0324	130	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0315	126	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0324	130	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0316	126	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0318	127	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0302	136	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0272	116	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0284	124	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0296	124	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0248	107	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0311	129	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0295	122	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0285	118	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.109	116	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.126	133	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.115	120	40-150
754-91-6	PFOSA	0.025	0.0306	122	40-150
31506-32-8	MeFOSA	0.025	0.0268	107	40-150
4151-50-2	EtFOSA	0.025	0.0283	113	40-150
2355-31-9	MeFOSAA	0.025	0.0302	121	40-150
2991-50-6	EtFOSAA	0.025	0.0282	113	40-150
24448-09-7	MeFOSE	0.25	0.307	123	40-150
1691-99-2	EtFOSE	0.25	0.305	122	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.129	129	40-150
919005-14-4	ADONA	0.0945	0.111	117	40-150
377-73-1	PFMPA	0.05	0.0513	103	40-150
863090-89-5	PFMBA	0.05	0.0690	138	40-150
151772-58-6	NFDHA	0.05	0.0727	145	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.110	118	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.106	112	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-BS	4Q41709.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0562	126	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.173	138	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.800	128	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.807	129	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	38%	20-150%
	13C5-PFPeA	95%	20-150%
	13C5-PFHxA	101%	20-150%
	13C4-PFHpA	100%	20-150%
	13C8-PFOA	91%	20-150%
	13C9-PFNA	95%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	99%	20-150%
	13C2-PFDoDA	94%	20-150%
	13C2-PFTeDA	93%	20-150%
	13C3-PFBS	93%	20-150%
	13C3-PFHxS	99%	20-150%
	13C8-PFOS	86%	20-150%
	13C8-FOSA	88%	20-150%
	d3-MeFOSA	93%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	82%	20-150%
	d5-EtFOSAA	81%	20-150%
	d7-MeFOSE	81%	20-150%
	d9-EtFOSE	90%	20-150%
	13C2-4:2FTS	92%	20-150%
	13C2-6:2FTS	83%	20-150%
	13C2-8:2FTS	91%	20-150%
	13C3-HFPO-DA	117%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-MS	4Q41713.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597
FC3096-1	4Q41712.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	FC3096-1 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.018 U		0.0893	0.111	124	40-150
2706-90-3	Perfluoropentanoic acid	0.0055 J		0.0446	0.0647	133	40-150
307-24-4	Perfluorohexanoic acid	0.0016 J		0.0223	0.0289	122	40-150
375-85-9	Perfluoroheptanoic acid	0.0045 U		0.0223	0.0288	129	40-150
335-67-1	Perfluorooctanoic acid	0.0045 U		0.0223	0.0274	123	40-150
375-95-1	Perfluorononanoic acid	0.0045 U		0.0223	0.0277	124	40-150
335-76-2	Perfluorodecanoic acid	0.0045 U		0.0223	0.0286	128	40-150
2058-94-8	Perfluoroundecanoic acid	0.0045 U		0.0223	0.0274	123	40-150
307-55-1	Perfluorododecanoic acid	0.0045 U		0.0223	0.0268	120	40-150
72629-94-8	Perfluorotridecanoic acid	0.0045 U		0.0223	0.0277	124	40-150
376-06-7	Perfluorotetradecanoic acid	0.0045 U		0.0223	0.0284	127	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0045 U		0.0198	0.0258	130	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		0.021	0.0248	118	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0045 U		0.0204	0.0255	125	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U		0.0213	0.0272	128	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U		0.0207	0.0244	118	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0045 U		0.0215	0.0278	129	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0045 U		0.0215	0.0258	120	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		0.0217	0.0257	119	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0837	0.105	125	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U		0.0848	0.103	121	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0857	0.101	118	40-150
754-91-6	PFOSA	0.0045 U		0.0223	0.0271	121	40-150
31506-32-8	MeFOSA	0.0045 U		0.0223	0.0241	108	40-150
4151-50-2	EtFOSA	0.0045 U		0.0223	0.0242	108	40-150
2355-31-9	MeFOSAA	0.0045 U		0.0223	0.0302	135	40-150
2991-50-6	EtFOSAA	0.0045 U		0.0223	0.0255	114	40-150
24448-09-7	MeFOSE	0.045 U		0.223	0.277	124	40-150
1691-99-2	EtFOSE	0.045 U		0.223	0.274	123	40-150
13252-13-6	HFPO-DA (GenX)	0.018 U		0.0893	0.110	123	40-150
919005-14-4	ADONA	0.018 U		0.0844	0.0976	116	40-150
377-73-1	PFMPA	0.0089 U		0.0446	0.0449	101	40-150
863090-89-5	PFMBA	0.0089 U		0.0446	0.0608	136	40-150
151772-58-6	NFDHA	0.0089 U		0.0446	0.0656	147	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U		0.0835	0.0902	108	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U		0.0844	0.0877	104	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-MS	4Q41713.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597
FC3096-1	4Q41712.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	FC3096-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0089 U	0.0397	0.0505	127	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	0.112	0.151	135	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	0.558	0.729	131	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	0.558	0.720	129	40-150

CAS No.	ID Standard Recoveries	MS	FC3096-1	Limits
	13C4-PFBA	27%	43%	20-150%
	13C5-PFPeA	94%	91%	20-150%
	13C5-PFHxA	98%	99%	20-150%
	13C4-PFHpA	97%	93%	20-150%
	13C8-PFOA	94%	88%	20-150%
	13C9-PFNA	93%	90%	20-150%
	13C6-PFDA	93%	91%	20-150%
	13C7-PFUnDA	88%	84%	20-150%
	13C2-PFDoDA	85%	77%	20-150%
	13C2-PFTeDA	80%	76%	20-150%
	13C3-PFBS	98%	94%	20-150%
	13C3-PFHxS	102%	103%	20-150%
	13C8-PFOS	84%	85%	20-150%
	13C8-FOSA	87%	82%	20-150%
	d3-MeFOSA	90%	75%	20-150%
	d5-EtFOSA	90%	73%	20-150%
	d3-MeFOSAA	73%	71%	20-150%
	d5-EtFOSAA	75%	70%	20-150%
	d7-MeFOSE	75%	68%	20-150%
	d9-EtFOSE	83%	71%	20-150%
	13C2-4:2FTS	88%	88%	20-150%
	13C2-6:2FTS	89%	80%	20-150%
	13C2-8:2FTS	93%	88%	20-150%
	13C3-HFPO-DA	116%	112%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-DUP	4Q41715.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597
FC3096-2	4Q41714.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	FC3096-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.018 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0050 J		0.0052 J		4	30
307-24-4	Perfluorohexanoic acid	0.0014 J		0.0016 J		13	30
375-85-9	Perfluoroheptanoic acid	0.0045 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0045 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0045 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0045 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0045 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0045 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0045 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0045 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0045 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0045 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0045 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0045 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
754-91-6	PFOSA	0.0045 U		ND		nc	30
31506-32-8	MeFOSA	0.0045 U		ND		nc	30
4151-50-2	EtFOSA	0.0045 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	0.045 U		ND		nc	30
1691-99-2	EtFOSE	0.045 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.018 U		ND		nc	30
919005-14-4	ADONA	0.018 U		ND		nc	30
377-73-1	PFMPA	0.0089 U		ND		nc	30
863090-89-5	PFMBA	0.0089 U		ND		nc	30
151772-58-6	NFDHA	0.0089 U		ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U		ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3096
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95719-DUP	4Q41715.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597
FC3096-2	4Q41714.D	1	03/06/23	MV	03/03/23	OP95719	S4Q597

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3096-1, FC3096-2, FC3096-3

CAS No.	Compound	FC3096-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0089	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.11	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC3096-2	Limits
	13C4-PFBA	48%	46%	20-150%
	13C5-PFPeA	94%	95%	20-150%
	13C5-PFHxA	98%	102%	20-150%
	13C4-PFHpA	95%	98%	20-150%
	13C8-PFOA	96%	92%	20-150%
	13C9-PFNA	90%	94%	20-150%
	13C6-PFDA	103%	96%	20-150%
	13C7-PFUnDA	99%	86%	20-150%
	13C2-PFDoDA	84%	75%	20-150%
	13C2-PFTeDA	85%	76%	20-150%
	13C3-PFBS	93%	93%	20-150%
	13C3-PFHxS	94%	99%	20-150%
	13C8-PFOS	88%	82%	20-150%
	13C8-FOSA	90%	90%	20-150%
	d3-MeFOSA	88%	84%	20-150%
	d5-EtFOSA	92%	80%	20-150%
	d3-MeFOSAA	77%	76%	20-150%
	d5-EtFOSAA	78%	71%	20-150%
	d7-MeFOSE	78%	71%	20-150%
	d9-EtFOSE	86%	76%	20-150%
	13C2-4:2FTS	86%	90%	20-150%
	13C2-6:2FTS	81%	83%	20-150%
	13C2-8:2FTS	91%	82%	20-150%
	13C3-HFPO-DA	115%	117%	20-150%

* = Outside of Control Limits.