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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC5685

Sampling Date: 04/28/23



Report to:

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Total number of pages in report: 45



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)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC5685

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC5685-1	04/28/23	08:56 AA	04/29/23	AQ	Ground Water	AF-RHMW17S-WGN01LF-2304W4
FC5685-2	04/28/23	07:50 AA	04/29/23	AQ	Equipment Blank	AF-RHMW17S-WQEB01-2304W4
FC5685-3	04/28/23	10:25 AA	04/29/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2304W4
FC5685-4	04/28/23	12:30 AA	04/29/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2304W4
FC5685-5	04/28/23	10:50 AA	04/29/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2304W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC5685

Site: N6274223F0104 RH Fire Suppression System

Report Date: 5/5/2023 5:40:14 PM

On 04/29/2023, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 0.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5685 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: OP96662

Sample(s) FC5685-3MS, FC5685-4DUP were used as the QC samples indicated.

Sample(s) FC5685-4 have surrogates outside control limits.

FC5685-4: Dilution required (ID recovery standard failure).

FC5685-4 for Perfluorobutanoic acid: Associated ID Standard outside control limits, Confirmed by batch QC.

FC5685-4 for 13C4-PFBA: Outside control limits.

FC5685-4 for d3-MeFOSAA: Outside control limits.

FC5685-4 for d5-EtFOSAA: Outside control limits.

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

Narrative prepared by:

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

Summary of Hits

Job Number: FC5685
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/28/23



Lab Sample ID	Client Sample ID	Result/ Analyte	LOQ	LOD	Units	Method
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FC5685-1 AF-RHMW17S-WGN01LF-2304W4

Perfluorohexanoic acid	2.1 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	1.1 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	1.1 J	3.6	0.91	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid	0.89 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid	1.3 J	3.6	1.8	ng/l	EPA DRAFT 1633

FC5685-2 AF-RHMW17S-WQEB01-2304W4

No hits reported in this sample.

FC5685-3 AF-RHMW17-WGN01LF-2304W4

Perfluorobutanoic acid	2.5 J	14	3.6	ng/l	EPA DRAFT 1633
Perfluoropentanoic acid	2.4 J	7.1	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.7 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.53 J	3.6	1.8	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	4.2 J	18	7.1	ng/l	EPA DRAFT 1633

FC5685-4 AF-RHMW17D-WGN01LF-2304W4

No hits reported in this sample.

FC5685-5 AF-RHMW17D-WQFB01-2304W4

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2304W4		
Lab Sample ID:	FC5685-1	Date Sampled:	04/28/23
Matrix:	AQ - Ground Water	Date Received:	04/29/23
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	4Q43903.D	1	05/03/23 15:15	NG	05/01/23 11:00	OP96662	S4Q634
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	1.8 U	7.3	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	2.1	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.1	3.6	1.8	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	1.1	3.6	0.91	0.45	ng/l	J
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	0.89	3.6	1.8	0.45	ng/l	J
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	1.3	3.6	1.8	0.49	ng/l	J
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	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	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

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Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2304W4		
Lab Sample ID:	FC5685-1	Date Sampled:	04/28/23
Matrix:	AQ - Ground Water	Date Received:	04/29/23
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	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
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	13C4-PFBA	29%		20-150%
	13C5-PFPeA	57%		20-150%
	13C5-PFHxA	74%		20-150%
	13C4-PFHpA	91%		20-150%
	13C8-PFOA	96%		20-150%
	13C9-PFNA	105%		20-150%
	13C6-PFDA	94%		20-150%
	13C7-PFUnDA	88%		20-150%
	13C2-PFDoDA	71%		20-150%
	13C2-PFTeDA	40%		20-150%
	13C3-PFBS	88%		20-150%
	13C3-PFHxS	98%		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-RHMW17S-WGN01LF-2304W4		
Lab Sample ID:	FC5685-1	Date Sampled:	04/28/23
Matrix:	AQ - Ground Water	Date Received:	04/29/23
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	96%		20-150%
	13C8-FOSA	51%		20-150%
	d3-MeFOSA	39%		20-150%
	d5-EtFOSA	41%		20-150%
	d3-MeFOSAA	100%		20-150%
	d5-EtFOSAA	88%		20-150%
	d7-MeFOSE	27%		20-150%
	d9-EtFOSE	31%		20-150%
	13C2-4:2FTS	78%		20-180%
	13C2-6:2FTS	81%		20-180%
	13C2-8:2FTS	75%		20-180%
	13C3-HFPO-DA	64%		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-RHMW17S-WQEB01-2304W4		
Lab Sample ID:	FC5685-2	Date Sampled:	04/28/23
Matrix:	AQ - Equipment Blank	Date Received:	04/29/23
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	4Q43904.D	1	05/03/23 15:29	NG	05/01/23 11:00	OP96662	S4Q634
Run #2							

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

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

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

PERFLUOROALKYL SULFONIC ACIDS

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

FLUOROTELOMER SULFONIC ACIDS

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

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	ng/l	

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

4.2
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2304W4		Date Sampled:	04/28/23
Lab Sample ID:	FC5685-2	Date Received:	04/29/23	
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a	
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

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

2355-31-9	MeFOSAA	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

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

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

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

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	111%		20-150%
	13C5-PFPeA	114%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	106%		20-150%
	13C6-PFDA	103%		20-150%
	13C7-PFUnDA	101%		20-150%
	13C2-PFDoDA	90%		20-150%
	13C2-PFTeDA	65%		20-150%
	13C3-PFBS	105%		20-150%
	13C3-PFHxS	102%		20-150%

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

4.2
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2304W4		Date Sampled:	04/28/23
Lab Sample ID:	FC5685-2		Date Received:	04/29/23
Matrix:	AQ - Equipment Blank		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	100%		20-150%
	13C8-FOSA	40%		20-150%
	d3-MeFOSA	34%		20-150%
	d5-EtFOSA	39%		20-150%
	d3-MeFOSAA	103%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	25%		20-150%
	d9-EtFOSE	28%		20-150%
	13C2-4:2FTS	123%		20-180%
	13C2-6:2FTS	135%		20-180%
	13C2-8:2FTS	119%		20-180%
	13C3-HFPO-DA	107%		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-RHMW17-WGN01LF-2304W4		
Lab Sample ID:	FC5685-3	Date Sampled:	04/28/23
Matrix:	AQ - Ground Water	Date Received:	04/29/23
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	4Q43905.D	1	05/03/23 15:43	NG	05/01/23 11:00	OP96662	S4Q634
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	2.5	14	3.6	1.7	ng/l	J
2706-90-3	Perfluoropentanoic acid	2.4	7.1	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	1.7	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.53	3.6	1.8	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	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	0.62	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	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	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	4.2	18	7.1	3.1	ng/l	J
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	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	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-RHMW17-WGN01LF-2304W4		
Lab Sample ID:	FC5685-3	Date Sampled:	04/28/23
Matrix:	AQ - Ground Water	Date Received:	04/29/23
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	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	95%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	109%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	101%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	81%		20-150%
	13C2-PFTeDA	63%		20-150%
	13C3-PFBS	103%		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-RHMW17-WGN01LF-2304W4	
Lab Sample ID:	FC5685-3	Date Sampled: 04/28/23
Matrix:	AQ - Ground Water	Date Received: 04/29/23
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	101%		20-150%
	13C8-FOSA	61%		20-150%
	d3-MeFOSA	53%		20-150%
	d5-EtFOSA	59%		20-150%
	d3-MeFOSAA	107%		20-150%
	d5-EtFOSAA	102%		20-150%
	d7-MeFOSE	37%		20-150%
	d9-EtFOSE	42%		20-150%
	13C2-4:2FTS	122%		20-180%
	13C2-6:2FTS	107%		20-180%
	13C2-8:2FTS	124%		20-180%
	13C3-HFPO-DA	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-RHMW17D-WGN01LF-2304W4

Lab Sample ID: FC5685-4

Date Sampled: 04/28/23

Matrix: AQ - Ground Water

Date Received: 04/29/23

Method: EPA DRAFT 1633 EPA 1633 DRAFT

Percent Solids: n/a

Project: N6274223F0104 RH Fire Suppression System

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q43909.D	1	05/03/23 16:39	NG	05/01/23 11:00	OP96662	S4Q634
Run #2 ^a	4Q43980.D	5	05/04/23 18:55	NG	05/01/23 11:00	OP96662	S4Q635

	Initial Volume	Final Volume
Run #1	570 ml	5.0 ml
Run #2	570 ml	5.0 ml

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

375-22-4	Perfluorobutanoic acid ^b	18 U ^c	70	18	8.4	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	EfFOSA	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-RHMW17D-WGN01LF-2304W4		
Lab Sample ID:	FC5685-4	Date Sampled:	04/28/23
Matrix:	AQ - Ground Water	Date Received:	04/29/23
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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PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	18 U ^c	22	18	4.4	ng/l	
2991-50-6	EtFOSAA	18 U ^c	22	18	5.8	ng/l	

PERFLUOROOCTANE 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		11% ^d	12% ^d	20-150%
13C5-PFPeA		30%	29%	20-150%
13C5-PFHxA		57%	58%	20-150%
13C4-PFHpA		87%	84%	20-150%
13C8-PFOA		96%	102%	20-150%
13C9-PFNA		101%	105%	20-150%
13C6-PFDA		107%	89%	20-150%
13C7-PFUnDA		98%	84%	20-150%
13C2-PFDoDA		86%	83%	20-150%
13C2-PFTeDA		56%	60%	20-150%
13C3-PFBS		69%	72%	20-150%
13C3-PFHxS		101%	106%	20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2304W4	
Lab Sample ID:	FC5685-4	Date Sampled: 04/28/23
Matrix:	AQ - Ground Water	Date Received: 04/29/23
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	101%	77%	20-150%
	13C8-FOSA	57%	39%	20-150%
	d3-MeFOSA	53%	38%	20-150%
	d5-EtFOSA	58%	39%	20-150%
	d3-MeFOSAA	157% ^d	100%	20-150%
	d5-EtFOSAA	161% ^d	120%	20-150%
	d7-MeFOSE	29%	21%	20-150%
	d9-EtFOSE	33%	22%	20-150%
	13C2-4:2FTS	69%	48%	20-180%
	13C2-6:2FTS	93%	108%	20-180%
	13C2-8:2FTS	108%	119%	20-180%
	13C3-HFPO-DA	48%	50%	20-150%

- (a) Dilution required (ID recovery standard failure).
- (b) Associated ID Standard outside control limits, Confirmed by batch QC.
- (c) Result is from Run# 2
- (d) Outside control limits.

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2304W4		
Lab Sample ID:	FC5685-5	Date Sampled:	04/28/23
Matrix:	AQ - Field Blank Water	Date Received:	04/29/23
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	4Q43911.D	1	05/03/23 17:08	NG	05/01/23 11:00	OP96662	S4Q634
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	1.8 U	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	1.8 U	3.6	1.8	0.45	ng/l	
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	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	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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2304W4		
Lab Sample ID:	FC5685-5	Date Sampled:	04/28/23
Matrix:	AQ - Field Blank Water	Date Received:	04/29/23
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	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
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	13C4-PFBA	113%		20-150%
	13C5-PFPeA	117%		20-150%
	13C5-PFHxA	114%		20-150%
	13C4-PFHpA	112%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	102%		20-150%
	13C6-PFDA	98%		20-150%
	13C7-PFUnDA	95%		20-150%
	13C2-PFDoDA	81%		20-150%
	13C2-PFTeDA	60%		20-150%
	13C3-PFBS	111%		20-150%
	13C3-PFHxS	98%		20-150%

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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2304W4	
Lab Sample ID:	FC5685-5	Date Sampled: 04/28/23
Matrix:	AQ - Field Blank Water	Date Received: 04/29/23
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	95%		20-150%
	13C8-FOSA	35%		20-150%
	d3-MeFOSA	37%		20-150%
	d5-EtFOSA	38%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	102%		20-150%
	d7-MeFOSE	23%		20-150%
	d9-EtFOSE	26%		20-150%
	13C2-4:2FTS	124%		20-180%
	13C2-6:2FTS	139%		20-180%
	13C2-8:2FTS	125%		20-180%
	13C3-HFPO-DA	109%		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:

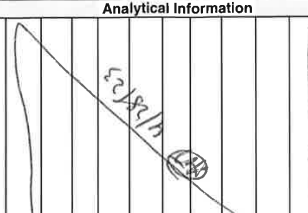
- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



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FC5685 CDC #: 2304W4AFSG12
 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				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 Email: katie.abbott@aecom.com		Project # 60697810																
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: Sampler 2:																		
SGS Orlando Sample	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION										PFAS EPA Draft 1633	LAB USE ONLY		
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	PC	NaOH	HCl	HNO3	H2SO4	NACHLZAC			DI WATER	MICH
	AF-RHMMW17S-WGN01LF-2304W4	4/18/23	0830	AA	GW	3		X									X	
	AF-RHMMW17S-WQEB01-2304W4	4/18/23	0750	AA	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 AWW 636-87477663												
Rush T/A Data Available VIA Email or Lablink								Sample Custody must be documented below each time samples change possession, including courier delivery.										
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation						
1 Avic Aspi		4/23/23 1330		2 [Signature] AECOM		4/23/23		3 [Signature] AECOM		4/23/23		4 [Signature] 4/23/23						
Relinquished by/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation						
5				6		7		8		1430								
Lab Use Only: Cooler Temperature (s) Celsius (corrected):								http://www.sgs.com/en/terms-and-conditions										

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Chain of Custody

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FC5685

COC #: 2304W4AFSG10

SGS - ORLANDO JOB #: PAGE 1 OF 1

Client / Reporting Information			Project Information			SGS - ORLANDO Quote #		SKIFF #												
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System																	
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 # 60697810																	
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:			Sampler 2:																	
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION											Matrix Codes				
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NH ₄ H	NH ₄ OH	H ₂ SO ₄	H ₂ O ₂ /ZnAC	DI WATER	MEDIH					
3	AF-RHMW17-WGN01LF-2304W4	11/28/13	10:55	AA	GW	3		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 Under Lab 016-87479663									
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 Avie Asoli		11/28/13		2 [Signature] AECOM			3 [Signature] AECOM		11/28/13		4 [Signature]									
5				6			7				8									
Lab Use Only : Cooler Temperature (s) Celsius (corrected):										http://www.sgs.com/en/terms-and-conditions										

PFAS_COCS_ALL.xls Rev 031316

FC5685: Chain of Custody

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Chain of Custody

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COC #: 2304W4AFSG11

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				PFAS EPA Draft 1633		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									
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii				LAB USE ONLY											
Project Contact: Katie Abbott Email: katie.abbott@aecom.com			Project # 60697810															
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:																		
Sampler 2:																		
SGS Orlando Sample #	Field ID / Point of Collection		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NON-H	ICLI	NI/OH	INCS	HSS04	INCH-ZNAC	IN WATER	MEDH	PFAS EPA Draft 1633	
	4	AF-RHMM17D-WGN01LF-2304W4	4/28/23	1230		GW	3		X								X	
5	AF-RHMM17D-WQFB01-2304W4	4/28/23	1050	APP	GW	3		X								X		
<p>Turnaround Time (Business days)</p> <p>10 Day (Business) Approved By: / Date: _____</p> <p>7 Day _____</p> <p><input checked="" type="checkbox"/> 5 Day _____</p> <p>3 Day RUSH _____</p> <p>2 Day RUSH _____</p> <p>1 Day RUSH _____</p> <p>Other _____</p> <p>Rush T/A Data Available VIA Email or Leblink _____</p> <p>Data Deliverable Information</p> <p><input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY)</p> <p><input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC)</p> <p><input type="checkbox"/> REDT1 (EPA LEVEL 3)</p> <p><input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4)</p> <p><input checked="" type="checkbox"/> EDD'S</p> <p>Comments / Remarks</p> <p>EDMS upload database: JBPHE</p> <p>EDMS Coverage: AFFF Assessment Sampling GW</p> <p>United AFB 016-87479663</p>																		
Sample Custody must be documented below each time samples change possession, including courier delivery.																		
Relinquished by Sampler/Affiliation			Date Time:			Received By/Affiliation			Date Time:			Received By/Affiliation						
1 Anne Asoli			4/28/23			2 Ileana Giam AECOM			4/28/23			4 [Signature]						
5						6			7			8 [Signature]						
Lab Use Only: Cooler Temperature (s) Celsius (corrected): _____																		
http://www.sgs.com/en/terms-and-conditions																		

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FC5685: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC5685

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 4/29/2023 2:30:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-87479663

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.0);

Cooler Temps (Corrected) °C: Cooler 1: (0.9);

Cooler Information

	Y	or	N
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Sample Information

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

Trip Blank Information

	Y	or	N	N/A
1. Trip Blank present / cooler	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	W	or	S	N/A
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #s: pH 0-3 _____ 230320 _____ pH 10-12 _____ 25BDH07 _____ Other: (Specify) pH 1.0 - 12.0 _____ 222221 _____
 Residual Chlorine Test Strip Lot #: _____

Comments SAMPLE #1 (AF-RHMW17S-WGN01LF-2304W4), COC STATES COLLECTION TIME: "08:56"; SAMPLE BOTTLE LABELS STATE "07:50"

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 4/29/2023 2:30:00 PM

Reviewer: CD

Date: 5/1/2023

FC5685: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC5685
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/28/23

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 FC5685

5.2
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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: FC5685
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-IBLK	4Q43892.D	1	05/03/23	NG	n/a	n/a	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

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

Instrument Blank

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-IBLK	4Q43892.D	1	05/03/23	NG	n/a	n/a	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	97% 20-150%
	13C6-PFDA	104% 20-150%
	13C7-PFUnDA	106% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	96% 20-150%
	13C3-PFBS	104% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	92% 20-150%
	d3-MeFOSA	91% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	102% 20-150%
	d7-MeFOSE	80% 20-150%
	d9-EtFOSE	82% 20-150%
	13C2-4:2FTS	113% 20-180%
	13C2-6:2FTS	124% 20-180%
	13C2-8:2FTS	121% 20-180%
	13C3-HFPO-DA	102% 20-150%

Instrument Blank

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q635-IBLK	4Q43953.D	1	05/04/23	NG	n/a	n/a	S4Q635

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	106% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	101% 20-150%
	13C9-PFNA	96% 20-150%
	13C6-PFDA	101% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	93% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	92% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	93% 20-150%
	d3-MeFOSA	94% 20-150%
	d5-EtFOSA	96% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	100% 20-150%
	d7-MeFOSE	82% 20-150%
	d9-EtFOSE	81% 20-150%
	13C2-4:2FTS	117% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	127% 20-180%
	13C3-HFPO-DA	101% 20-150%

Continuing Calibration Blank

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-ICCB	4Q43908.D	1	05/03/23	NG	n/a	n/a	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-4, FC5685-5

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

Continuing Calibration Blank

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-ICCB	4Q43908.D	1	05/03/23	NG	n/a	n/a	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-4, FC5685-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	98% 20-150%
	13C4-PFHpA	99% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	103% 20-150%
	13C6-PFDA	94% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	87% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	96% 20-150%
	d3-MeFOSA	100% 20-150%
	d5-EtFOSA	98% 20-150%
	d3-MeFOSAA	112% 20-150%
	d5-EtFOSAA	107% 20-150%
	d7-MeFOSE	84% 20-150%
	d9-EtFOSE	81% 20-150%
	13C2-4:2FTS	110% 20-180%
	13C2-6:2FTS	128% 20-180%
	13C2-8:2FTS	126% 20-180%
	13C3-HFPO-DA	94% 20-150%

Continuing Calibration Blank

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q635-ICCB	4Q43979.D	1	05/04/23	NG	n/a	n/a	S4Q635

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	106% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	98% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	100% 20-150%
	13C2-PFTeDA	94% 20-150%
	13C3-PFBS	93% 20-150%
	13C3-PFHxS	90% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	93% 20-150%
	d3-MeFOSA	94% 20-150%
	d5-EtFOSA	93% 20-150%
	d3-MeFOSAA	113% 20-150%
	d5-EtFOSAA	116% 20-150%
	d7-MeFOSE	79% 20-150%
	d9-EtFOSE	76% 20-150%
	13C2-4:2FTS	118% 20-180%
	13C2-6:2FTS	126% 20-180%
	13C2-8:2FTS	119% 20-180%
	13C3-HFPO-DA	95% 20-150%

Continuing Calibration Blank

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q635-ICCB	4Q43990.D	1	05/04/23	NG	n/a	n/a	S4Q635

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	97% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	99% 20-150%
	13C9-PFNA	103% 20-150%
	13C6-PFDA	101% 20-150%
	13C7-PFUnDA	104% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	92% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	94% 20-150%
	13C8-FOSA	92% 20-150%
	d3-MeFOSA	94% 20-150%
	d5-EtFOSA	91% 20-150%
	d3-MeFOSAA	116% 20-150%
	d5-EtFOSAA	115% 20-150%
	d7-MeFOSE	80% 20-150%
	d9-EtFOSE	76% 20-150%
	13C2-4:2FTS	137% 20-180%
	13C2-6:2FTS	144% 20-180%
	13C2-8:2FTS	163% 20-180%
	13C3-HFPO-DA	95% 20-150%

Method Blank Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MB	4Q43900.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

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

Method Blank Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MB	4Q43900.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	110% 20-150%
	13C5-PFPeA	115% 20-150%
	13C5-PFHxA	113% 20-150%
	13C4-PFHpA	115% 20-150%
	13C8-PFOA	110% 20-150%
	13C9-PFNA	118% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	102% 20-150%
	13C2-PFDoDA	95% 20-150%
	13C2-PFTeDA	72% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	103% 20-150%
	13C8-PFOS	110% 20-150%
	13C8-FOSA	44% 20-150%
	d3-MeFOSA	34% 20-150%
	d5-EtFOSA	38% 20-150%
	d3-MeFOSAA	105% 20-150%
	d5-EtFOSAA	103% 20-150%
	d7-MeFOSE	25% 20-150%
	d9-EtFOSE	28% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	115% 20-180%
	13C2-8:2FTS	125% 20-180%
	13C3-HFPO-DA	110% 20-150%

Blank Spike Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-LLBS	4Q43899.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0261	87	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0131	87	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0070	93	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0063	84	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0065	87	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0065	87	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0070	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0064	85	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0063	84	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0055	73	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0066	88	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0058	87	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0063	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0063	92	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0065	91	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0056	80	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0062	86	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0057	79	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0059	81	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0245	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0265	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0275	95	40-150
754-91-6	PFOSA	0.0075	0.0074	99	40-150
31506-32-8	MeFOSA	0.015	0.0130	87	40-150
4151-50-2	EtFOSA	0.015	0.0128	85	40-150
2355-31-9	MeFOSAA	0.0075	0.0058	77	40-150
2991-50-6	EtFOSAA	0.0075	0.0067	89	40-150
24448-09-7	MeFOSE	0.0375	0.0345	92	40-150
1691-99-2	EtFOSE	0.0375	0.0267	71	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0140	93	40-150
919005-14-4	ADONA	0.0142	0.0127	90	40-150
377-73-1	PFMPA	0.015	0.0135	90	40-150
863090-89-5	PFMBA	0.015	0.0132	88	40-150
151772-58-6	NFDHA	0.015	0.0144	96	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0120	86	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0118	83	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-LLBS	4Q43899.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0120	90	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0284	76	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.137	73	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.133	71	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	109%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	111%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	83%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	106%	20-150%
	13C8-PFOS	106%	20-150%
	13C8-FOSA	39%	20-150%
	d3-MeFOSA	34%	20-150%
	d5-EtFOSA	34%	20-150%
	d3-MeFOSAA	108%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	22%	20-150%
	d9-EtFOSE	25%	20-150%
	13C2-4:2FTS	127%	20-180%
	13C2-6:2FTS	126%	20-180%
	13C2-8:2FTS	113%	20-180%
	13C3-HFPO-DA	111%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-BS	4Q43898.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0918	92	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0453	91	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0224	90	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0232	93	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0225	90	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0228	91	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0229	92	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0219	88	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0232	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0218	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0248	99	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0204	92	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0224	95	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0215	94	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0222	93	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0224	97	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0219	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0205	85	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0206	85	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0819	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0875	92	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0943	98	40-150
754-91-6	PFOSA	0.025	0.0250	100	40-150
31506-32-8	MeFOSA	0.05	0.0515	103	40-150
4151-50-2	EtFOSA	0.05	0.0454	91	40-150
2355-31-9	MeFOSAA	0.025	0.0245	98	40-150
2991-50-6	EtFOSAA	0.025	0.0216	86	40-150
24448-09-7	MeFOSE	0.125	0.113	90	40-150
1691-99-2	EtFOSE	0.125	0.101	81	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0485	97	40-150
919005-14-4	ADONA	0.0473	0.0463	98	40-150
377-73-1	PFMPA	0.05	0.0463	93	40-150
863090-89-5	PFMBA	0.05	0.0453	91	40-150
151772-58-6	NFDHA	0.05	0.0472	94	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0445	95	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0442	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-BS	4Q43898.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0410	92	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0976	78	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.484	77	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.483	77	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	107%	20-150%
	13C5-PFPeA	111%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	110%	20-150%
	13C7-PFUnDA	112%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	84%	20-150%
	13C3-PFBS	114%	20-150%
	13C3-PFHxS	105%	20-150%
	13C8-PFOS	106%	20-150%
	13C8-FOSA	45%	20-150%
	d3-MeFOSA	32%	20-150%
	d5-EtFOSA	37%	20-150%
	d3-MeFOSAA	109%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	27%	20-150%
	d9-EtFOSE	29%	20-150%
	13C2-4:2FTS	133%	20-180%
	13C2-6:2FTS	122%	20-180%
	13C2-8:2FTS	118%	20-180%
	13C3-HFPO-DA	104%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MS	4Q43906.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-3	4Q43905.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	FC5685-3 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.0025	J	0.0962	0.0944	96	40-150
2706-90-3	Perfluoropentanoic acid	0.0024	J	0.0481	0.0469	93	40-150
307-24-4	Perfluorohexanoic acid	0.0017	J	0.024	0.0237	92	40-150
375-85-9	Perfluoroheptanoic acid	0.00053	J	0.024	0.0226	92	40-150
335-67-1	Perfluorooctanoic acid	0.0036	U	0.024	0.0224	93	40-150
375-95-1	Perfluorononanoic acid	0.0036	U	0.024	0.0223	93	40-150
335-76-2	Perfluorodecanoic acid	0.0036	U	0.024	0.0242	101	40-150
2058-94-8	Perfluoroundecanoic acid	0.0036	U	0.024	0.0226	94	40-150
307-55-1	Perfluorododecanoic acid	0.0036	U	0.024	0.0229	95	40-150
72629-94-8	Perfluorotridecanoic acid	0.0036	U	0.024	0.0209	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.0036	U	0.024	0.0241	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0036	U	0.0213	0.0201	94	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045	U	0.0226	0.0215	95	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0036	U	0.022	0.0212	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0036	U	0.0229	0.0230	100	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0036	U	0.0223	0.0200	90	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0036	U	0.0231	0.0200	86	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0036	U	0.0232	0.0186	80	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045	U	0.0233	0.0152	65	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018	U	0.0901	0.0874	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0042	J	0.0913	0.0897	94	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0923	0.0938	102	40-150
754-91-6	PFOSA	0.0036	U	0.024	0.0240	100	40-150
31506-32-8	MeFOSA	0.0071	U	0.0481	0.0468	97	40-150
4151-50-2	EtFOSA	0.0071	U	0.0481	0.0446	93	40-150
2355-31-9	MeFOSAA	0.0045	U	0.024	0.0245	102	40-150
2991-50-6	EtFOSAA	0.0045	U	0.024	0.0232	97	40-150
24448-09-7	MeFOSE	0.036	U	0.12	0.107	89	40-150
1691-99-2	EtFOSE	0.036	U	0.12	0.108	90	40-150
13252-13-6	HFPO-DA (GenX)	0.0036	U	0.0481	0.0472	98	40-150
919005-14-4	ADONA	0.0071	U	0.0454	0.0468	103	40-150
377-73-1	PFMPA	0.0071	U	0.0481	0.0436	91	40-150
863090-89-5	PFMBA	0.0071	U	0.0481	0.0449	93	40-150
151772-58-6	NFDHA	0.0071	U	0.0481	0.0453	94	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0071	U	0.045	0.0386	86	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0071	U	0.0454	0.0336	74	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MS	4Q43906.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-3	4Q43905.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	FC5685-3 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0071 U	0.0428	0.0408	95	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.12	0.0847	70	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.089 U	0.601	0.479	80	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.089 U	0.601	0.498	83	40-150

CAS No.	ID Standard Recoveries	MS	FC5685-3	Limits
	13C4-PFBA	93%	95%	20-150%
	13C5-PFPeA	109%	110%	20-150%
	13C5-PFHxA	107%	109%	20-150%
	13C4-PFHpA	111%	110%	20-150%
	13C8-PFOA	106%	105%	20-150%
	13C9-PFNA	100%	100%	20-150%
	13C6-PFDA	85%	101%	20-150%
	13C7-PFUnDA	81%	100%	20-150%
	13C2-PFDoDA	70%	81%	20-150%
	13C2-PFTeDA	55%	63%	20-150%
	13C3-PFBS	99%	103%	20-150%
	13C3-PFHxS	97%	101%	20-150%
	13C8-PFOS	93%	101%	20-150%
	13C8-FOSA	53%	61%	20-150%
	d3-MeFOSA	41%	53%	20-150%
	d5-EtFOSA	46%	59%	20-150%
	d3-MeFOSAA	92%	107%	20-150%
	d5-EtFOSAA	88%	102%	20-150%
	d7-MeFOSE	30%	37%	20-150%
	d9-EtFOSE	31%	42%	20-150%
	13C2-4:2FTS	105%	122%	20-180%
	13C2-6:2FTS	114%	107%	20-180%
	13C2-8:2FTS	103%	124%	20-180%
	13C3-HFPO-DA	102%	103%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-DUP	4Q43910.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4	4Q43909.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4 ^a	4Q43980.D	5	05/04/23	NG	05/01/23	OP96662	S4Q635

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	FC5685-4 ug/l	DUP Q ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.070 U ^b	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0070 U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0035 U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0035 U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0035 U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0035 U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0035 U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0035 U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0035 U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0035 U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0035 U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0035 U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0035 U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0035 U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0035 U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0035 U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0035 U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0044 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	0.0035 U	ND		nc	30
31506-32-8	MeFOSA	0.0070 U	ND		nc	30
4151-50-2	EtFOSA	0.0070 U	ND		nc	30
2355-31-9	MeFOSAA	0.022 U ^b	ND		nc	30
2991-50-6	EtFOSAA	0.022 U ^b	ND		nc	30
24448-09-7	MeFOSE	0.035 U	ND		nc	30
1691-99-2	EtFOSE	0.035 U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0035 U	ND		nc	30
919005-14-4	ADONA	0.0070 U	ND		nc	30
377-73-1	PFMPA	0.0070 U	ND		nc	30
863090-89-5	PFMBA	0.0070 U	ND		nc	30
151772-58-6	NFDHA	0.0070 U	ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0070 U	ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0070 U	ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5685
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-DUP	4Q43910.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4	4Q43909.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4 ^a	4Q43980.D	5	05/04/23	NG	05/01/23	OP96662	S4Q635

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5685-1, FC5685-2, FC5685-3, FC5685-4, FC5685-5

CAS No.	Compound	FC5685-4 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0070 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.088 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.088 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC5685-4	FC5685-4	Limits
	13C4-PFBA	10%* c	11%* c	12%* c	20-150%
	13C5-PFPeA	27%	30%	29%	20-150%
	13C5-PFHxA	53%	57%	58%	20-150%
	13C4-PFHpA	78%	87%	84%	20-150%
	13C8-PFOA	88%	96%	102%	20-150%
	13C9-PFNA	96%	101%	105%	20-150%
	13C6-PFDA	92%	107%	89%	20-150%
	13C7-PFUnDA	90%	98%	84%	20-150%
	13C2-PFDoDA	78%	86%	83%	20-150%
	13C2-PFTeDA	45%	56%	60%	20-150%
	13C3-PFBS	65%	69%	72%	20-150%
	13C3-PFHxS	86%	101%	106%	20-150%
	13C8-PFOS	97%	101%	77%	20-150%
	13C8-FOSA	67%	57%	39%	20-150%
	d3-MeFOSA	61%	53%	38%	20-150%
	d5-EtFOSA	59%	58%	39%	20-150%
	d3-MeFOSAA	156%* c	157%* c	100%	20-150%
	d5-EtFOSAA	165%* c	161%* c	120%	20-150%
	d7-MeFOSE	32%	29%	21%	20-150%
	d9-EtFOSE	32%	33%	22%	20-150%
	13C2-4:2FTS	61%	69%	48%	20-180%
	13C2-6:2FTS	75%	93%	108%	20-180%
	13C2-8:2FTS	94%	108%	119%	20-180%
	13C3-HFPO-DA	45%	48%	50%	20-150%

- (a) Dilution required (ID recovery standard failure).
- (b) Result is from Run #2.
- (c) Outside control limits.

* = Outside of Control Limits.