The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC5316

Sampling Date: 04/17/23

Report to:

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

Total number of pages in report: 32

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

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

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

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Sample Summary

AECOM, INC.

Job No: FC5316

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC5316-1	04/17/23	12:40	EMAG	04/18/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2304W3
FC5316-2	04/17/23	10:50	EMAG	04/18/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2304W3

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC5316

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 4/25/2023 2:45:30 PM

On 04/18/2023, 2 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 3.7 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5316 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:** OP96472

Sample(s) FC5316-1MS, FC5316-2DUP were used as the QC samples indicated.

Matrix Spike Recovery(s) for ADONA, Perfluoropentanoic acid are outside control limits. Probable cause is due to matrix interference.

RPD(s) for Duplicate for Perfluorooctanoic acid are outside control limits for sample OP96472-DUP. Probable cause is due to sample non-homogeneity.

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: FC5316
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/17/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5316-1	**AF-RHMW03-WGN01LF-2304W3**					
Perfluorohexanoic acid		2.0 J	4.5	0.89	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		0.89 J	4.5	0.89	ng/l	EPA DRAFT 1633
PFOSA		1.2 J	4.5	1.8	ng/l	EPA DRAFT 1633
FC5316-2	**AF-RHMW02-WGN01LF-2304W3**					
Perfluoropentanoic acid		2.7 J	8.9	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		1.7 J	4.5	0.89	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		1.1 J	4.5	0.89	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		5.5 J	18	7.1	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2304W3		
Lab Sample ID:	FC5316-1	**Date Sampled:**	04/17/23
Matrix:	AQ - Ground Water	**Date Received:**	04/18/23
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	4Q43446.D	1	04/21/23 20:09	MV	04/19/23 10:00	OP96472	S4Q627
Run #2							

	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.9	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	2.0	4.5	0.89	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.89	4.5	0.89	0.45	ng/l	J
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	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.2	4.5	1.8	0.60	ng/l	J
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-RHMW03-WGN01LF-2304W3		
Lab Sample ID:	FC5316-1	**Date Sampled:**	04/17/23
Matrix:	AQ - Ground Water	**Date Received:**	04/18/23
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
PERFLUOROOCTANE 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	
PERFLUOROOCTANE 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
	13C4-PFBA	72%		20-150%
	13C5-PFPeA	86%		20-150%
	13C5-PFHxA	105%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	101%		20-150%
	13C9-PFNA	106%		20-150%
	13C6-PFDA	109%		20-150%
	13C7-PFUnDA	103%		20-150%
	13C2-PFDoDA	93%		20-150%
	13C2-PFTeDA	77%		20-150%
	13C3-PFBS	112%		20-150%
	13C3-PFHxS	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-RHMW03-WGN01LF-2304W3		
Lab Sample ID:	FC5316-1	**Date Sampled:**	04/17/23
Matrix:	AQ - Ground Water	**Date Received:**	04/18/23
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	99%		20-150%
	13C8-FOSA	90%		20-150%
	d3-MeFOSA	82%		20-150%
	d5-EtFOSA	89%		20-150%
	d3-MeFOSAA	109%		20-150%
	d5-EtFOSAA	103%		20-150%
	d7-MeFOSE	83%		20-150%
	d9-EtFOSE	90%		20-150%
	13C2-4:2FTS	111%		20-150%
	13C2-6:2FTS	94%		20-150%
	13C2-8:2FTS	88%		20-150%
	13C3-HFPO-DA	76%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2304W3		
Lab Sample ID:	FC5316-2	**Date Sampled:**	04/17/23
Matrix:	AQ - Ground Water	**Date Received:**	04/18/23
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	4Q43448.D	1	04/21/23 20:37	MV	04/19/23 10:00	OP96472	S4Q627
Run #2							

	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	2.7	8.9	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	1.7	4.5	0.89	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.1	4.5	0.89	0.45	ng/l	J
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	5.5	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	
PERFLUOROOCTANE 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	

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2304W3		
Lab Sample ID:	FC5316-2	**Date Sampled:**	04/17/23
Matrix:	AQ - Ground Water	**Date Received:**	04/18/23
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
PERFLUOROOCTANE 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	
PERFLUOROOCTANE 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
	13C4-PFBA	90%		20-150%
	13C5-PFPeA	104%		20-150%
	13C5-PFHxA	109%		20-150%
	13C4-PFHpA	109%		20-150%
	13C8-PFOA	103%		20-150%
	13C9-PFNA	102%		20-150%
	13C6-PFDA	100%		20-150%
	13C7-PFUnDA	88%		20-150%
	13C2-PFDoDA	75%		20-150%
	13C2-PFTeDA	54%		20-150%
	13C3-PFBS	118%		20-150%
	13C3-PFHxS	110%		20-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2304W3		
Lab Sample ID:	FC5316-2	**Date Sampled:**	04/17/23
Matrix:	AQ - Ground Water	**Date Received:**	04/18/23
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	70%		20-150%
	d3-MeFOSA	71%		20-150%
	d5-EtFOSA	77%		20-150%
	d3-MeFOSAA	95%		20-150%
	d5-EtFOSAA	98%		20-150%
	d7-MeFOSE	65%		20-150%
	d9-EtFOSE	72%		20-150%
	13C2-4:2FTS	95%		20-150%
	13C2-6:2FTS	89%		20-150%
	13C2-8:2FTS	83%		20-150%
	13C3-HFPO-DA	88%		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

FC5316
SGS - ORLANDO JOB # :

COC #: 2304W3AFSG02
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SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
Project Contact: Katie Abbott Email: katie.abbott@aecom.com
Project Manager: Watson Tanji Email: watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: Ben Schiller Sampler 2: Angelo Comeli

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 60697810
Fax #
Client Purchase Order #

Analytical Information

PFAS EPA Draft 1633

EM 04/17/23

Matrix Codes

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

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW03-WGN01LF-2304W3	4/17/23	1240	BS,AG,EM	GW	3		X								X	

EM 04/17/23

INITIAL ASSESSMENT

LABEL VERIFICATION

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
United AWB 016 91766684

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	Eli Muth / AECOM	04/17/23 1420	2 Alex Edmonds / AECOM	3 Alex Edmonds / AECOM	4/17/23 1455	4 4/18/23 500
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.8/2.5

http://www.sgs.com/en/terms-and-conditions

PFAS_COCs_ALL.xls Rev 031318

FC5316: Chain of Custody
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SGS North America Inc - Orlando
Chain of Custody

FC5316

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www.sgs.com

SGS - ORLANDO JOB # :

C0C #: 2304W3AFSG01

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SGS - ORLANDO Quote #

SKIFF #

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 Manager:** Watson Tanji **Email:** watson.tanji@aecom.com	**Project #** 60697810		
Phone #: 303-796-4624 / 808-954-4512	**Fax #**		
Sampler(s) Name(s) (Printed) **Sampler 1:** Ben Snider **Sampler 2:** Angela Grembe	**Client Purchase Order #**		

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
2	AF-RHMW02-WGN01LF-2304W3	4/17/23	1050	BS, AG, EM	GW	3		X								X	

EM 4/17/23

EM 04/17/23

Turnaround Time (Business days)

10 Day (Business) — Approved By: / Date:
7 Day
[5 Day]
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW

United AWB 016-91766684

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	Eli Morton / AECOM	04/17/23 1460	2 ALEX Edmonds / AECOM	3 ALEX Edmonds AECOM	4/17/23 1455	4 4/18/23 FED
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
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 031318

FC5316: Chain of Custody
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SGS Sample Receipt Summary

Job Number: FC5316 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 4/18/2023 3:00:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-91766684

Therm ID: IR 1; **Therm CF:** -0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (3.7);

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 #s: pH 0-3 230320 pH 10-12 25BDH07 Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS Date: 4/18/2023 3:00:00 PM Reviewer: CD Date: 4/20/2023

FC5316: Chain of Custody
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QC Evaluation: DOD QSM5.x Limits

Job Number: FC5316
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/17/23

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

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

* Sample used for QC is not from job FC5316

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: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q627-IBLK	4Q43427.D	1	04/21/23	MV	n/a	n/a	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

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	
757124-72-4	4:2 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	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q627-IBLK	4Q43427.D	1	04/21/23	MV	n/a	n/a	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

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	
914637-49-3	5:3 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	100%	20-150%
	13C5-PFPeA	99%	20-150%
	13C5-PFHxA	99%	20-150%
	13C4-PFHpA	100%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	95%	20-150%
	13C3-PFBS	100%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	94%	20-150%
	13C8-FOSA	91%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	99%	20-150%
	13C2-4:2FTS	117%	20-150%
	13C2-6:2FTS	104%	20-150%
	13C2-8:2FTS	108%	20-150%

Continuing Calibration Blank

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q627-ICCB	4Q43441.D	1	04/21/23	MV	n/a	n/a	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

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	
757124-72-4	4:2 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	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q627-ICCB	4Q43441.D	1	04/21/23	MV	n/a	n/a	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

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	
914637-49-3	5:3 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	101%	20-150%
	13C5-PFPeA	96%	20-150%
	13C5-PFHxA	99%	20-150%
	13C4-PFHpA	96%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	92%	20-150%
	13C7-PFUnDA	102%	20-150%
	13C2-PFDoDA	97%	20-150%
	13C2-PFTeDA	95%	20-150%
	13C3-PFBS	102%	20-150%
	13C3-PFHxS	101%	20-150%
	13C8-PFOS	83%	20-150%
	13C8-FOSA	89%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	101%	20-150%
	13C2-4:2FTS	116%	20-150%
	13C2-6:2FTS	131%	20-150%
	13C2-8:2FTS	113%	20-150%

Method Blank Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-MB	4Q43445.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

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	
757124-72-4	4:2 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	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-MB	4Q43445.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

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	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	112%	20-150%
	13C5-PFPeA	106%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	104%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	111%	20-150%
	13C7-PFUnDA	101%	20-150%
	13C2-PFDoDA	93%	20-150%
	13C2-PFTeDA	82%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	109%	20-150%
	13C8-PFOS	110%	20-150%
	13C8-FOSA	72%	20-150%
	d3-MeFOSA	73%	20-150%
	d5-EtFOSA	81%	20-150%
	d3-MeFOSAA	118%	20-150%
	d5-EtFOSAA	104%	20-150%
	d7-MeFOSE	60%	20-150%
	d9-EtFOSE	74%	20-150%
	13C2-4:2FTS	133%	20-150%
	13C2-6:2FTS	133%	20-150%
	13C2-8:2FTS	131%	20-150%
	13C3-HFPO-DA	91%	20-150%

Blank Spike Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-LLBS	4Q43444.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0329	110	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0175	117	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0084	112	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0084	112	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0090	120	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0092	123	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0082	109	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0090	120	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0085	113	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0094	125	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0089	119	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0078	117	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0088	125	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0079	115	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0078	109	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0080	115	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0069	96	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0077	106	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0072	99	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0392	139	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0326	114	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0340	118	40-150
754-91-6	PFOSA	0.0075	0.0093	124	40-150
31506-32-8	MeFOSA	0.015	0.0174	116	40-150
4151-50-2	EtFOSA	0.015	0.0176	117	40-150
2355-31-9	MeFOSAA	0.0075	0.0082	109	40-150
2991-50-6	EtFOSAA	0.0075	0.0100	133	40-150
24448-09-7	MeFOSE	0.0375	0.0368	98	40-150
1691-99-2	EtFOSE	0.0375	0.0415	111	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0166	111	40-150
919005-14-4	ADONA	0.0142	0.0192	135	40-150
377-73-1	PFMPA	0.015	0.0175	117	40-150
863090-89-5	PFMBA	0.015	0.0177	118	40-150
151772-58-6	NFDHA	0.015	0.0208	139	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0184	131	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0189	133	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-LLBS	4Q43444.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0147	110	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0336	90	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.203	108	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.196	105	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	109%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	105%	20-150%
	13C4-PFHpA	105%	20-150%
	13C8-PFOA	105%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	107%	20-150%
	13C8-PFOS	103%	20-150%
	13C8-FOSA	73%	20-150%
	d3-MeFOSA	76%	20-150%
	d5-EtFOSA	79%	20-150%
	d3-MeFOSAA	111%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	65%	20-150%
	d9-EtFOSE	75%	20-150%
	13C2-4:2FTS	121%	20-150%
	13C2-6:2FTS	132%	20-150%
	13C2-8:2FTS	126%	20-150%
	13C3-HFPO-DA	88%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-BS	4Q43443.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.111	111	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0590	118	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0262	105	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0271	108	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0303	121	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0270	108	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0276	110	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0290	116	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0292	117	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0293	117	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0273	109	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0241	109	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0270	115	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0256	112	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0272	114	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0270	116	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0258	107	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0268	111	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0251	104	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.107	114	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.108	114	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.110	115	40-150
754-91-6	PFOSA	0.025	0.0270	108	40-150
31506-32-8	MeFOSA	0.05	0.0571	114	40-150
4151-50-2	EtFOSA	0.05	0.0571	114	40-150
2355-31-9	MeFOSAA	0.025	0.0273	109	40-150
2991-50-6	EtFOSAA	0.025	0.0305	122	40-150
24448-09-7	MeFOSE	0.125	0.139	111	40-150
1691-99-2	EtFOSE	0.125	0.145	116	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0564	113	40-150
919005-14-4	ADONA	0.0473	0.0640	135	40-150
377-73-1	PFMPA	0.05	0.0247	49	40-150
863090-89-5	PFMBA	0.05	0.0624	125	40-150
151772-58-6	NFDHA	0.05	0.0621	124	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0608	130	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0616	130	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-BS	4Q43443.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0483	109	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0519	42	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.639	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.641	103	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	24%	20-150%
	13C5-PFPeA	96%	20-150%
	13C5-PFHxA	114%	20-150%
	13C4-PFHpA	111%	20-150%
	13C8-PFOA	113%	20-150%
	13C9-PFNA	113%	20-150%
	13C6-PFDA	114%	20-150%
	13C7-PFUnDA	107%	20-150%
	13C2-PFDoDA	104%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	117%	20-150%
	13C3-PFHxS	115%	20-150%
	13C8-PFOS	109%	20-150%
	13C8-FOSA	84%	20-150%
	d3-MeFOSA	86%	20-150%
	d5-EtFOSA	89%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	121%	20-150%
	d7-MeFOSE	65%	20-150%
	d9-EtFOSE	76%	20-150%
	13C2-4:2FTS	137%	20-150%
	13C2-6:2FTS	129%	20-150%
	13C2-8:2FTS	129%	20-150%
	13C3-HFPO-DA	94%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-MS	4Q43447.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627
FC5316-1	4Q43446.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	FC5316-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018	U	0.0893	0.105	118	40-150
2706-90-3	Perfluoropentanoic acid	0.0089	U	0.0446	0.0754	169*	40-150
307-24-4	Perfluorohexanoic acid	0.0020	J	0.0223	0.0267	111	40-150
375-85-9	Perfluoroheptanoic acid	0.00089	J	0.0223	0.0268	116	40-150
335-67-1	Perfluorooctanoic acid	0.0045	U	0.0223	0.0290	130	40-150
375-95-1	Perfluorononanoic acid	0.0045	U	0.0223	0.0265	119	40-150
335-76-2	Perfluorodecanoic acid	0.0045	U	0.0223	0.0245	110	40-150
2058-94-8	Perfluoroundecanoic acid	0.0045	U	0.0223	0.0283	127	40-150
307-55-1	Perfluorododecanoic acid	0.0045	U	0.0223	0.0273	122	40-150
72629-94-8	Perfluorotridecanoic acid	0.0045	U	0.0223	0.0267	120	40-150
376-06-7	Perfluorotetradecanoic acid	0.0045	U	0.0223	0.0259	116	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0045	U	0.0198	0.0221	112	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045	U	0.021	0.0259	123	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	0.0280	132	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0045	U	0.0207	0.0292	141	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0045	U	0.0215	0.0280	130	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0045	U	0.0215	0.0287	133	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045	U	0.0217	0.0226	104	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0837	0.0958	114	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0848	0.0991	117	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0857	0.116	135	40-150
754-91-6	PFOSA	0.0012	J	0.0223	0.0271	116	40-150
31506-32-8	MeFOSA	0.0045	U	0.0446	0.0528	118	40-150
4151-50-2	EtFOSA	0.0045	U	0.0446	0.0527	118	40-150
2355-31-9	MeFOSAA	0.0045	U	0.0223	0.0284	127	40-150
2991-50-6	EtFOSAA	0.0045	U	0.0223	0.0282	126	40-150
24448-09-7	MeFOSE	0.045	U	0.112	0.136	122	40-150
1691-99-2	EtFOSE	0.045	U	0.112	0.133	119	40-150
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0446	0.0560	125	40-150
919005-14-4	ADONA	0.018	U	0.0422	0.0729	173*	40-150
377-73-1	PFMPA	0.0089	U	0.0446	0.0443	99	40-150
863090-89-5	PFMBA	0.0089	U	0.0446	0.0594	133	40-150
151772-58-6	NFDHA	0.0089	U	0.0446	0.0353	79	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.0417	0.0623	149	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0422	0.0559	133	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-MS	4Q43447.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627
FC5316-1	4Q43446.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	FC5316-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0089	U	0.0397	0.0436	110	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	0.112	0.0873	78	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.558	0.712	128	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.558	0.697	125	40-150

CAS No.	ID Standard Recoveries	MS	FC5316-1	Limits
	13C4-PFBA	77%	72%	20-150%
	13C5-PFPeA	87%	86%	20-150%
	13C5-PFHxA	110%	105%	20-150%
	13C4-PFHpA	113%	107%	20-150%
	13C8-PFOA	104%	101%	20-150%
	13C9-PFNA	102%	106%	20-150%
	13C6-PFDA	105%	109%	20-150%
	13C7-PFUnDA	97%	103%	20-150%
	13C2-PFDoDA	90%	93%	20-150%
	13C2-PFTeDA	75%	77%	20-150%
	13C3-PFBS	108%	112%	20-150%
	13C3-PFHxS	107%	112%	20-150%
	13C8-PFOS	93%	99%	20-150%
	13C8-FOSA	96%	90%	20-150%
	d3-MeFOSA	90%	82%	20-150%
	d5-EtFOSA	94%	89%	20-150%
	d3-MeFOSAA	102%	109%	20-150%
	d5-EtFOSAA	102%	103%	20-150%
	d7-MeFOSE	83%	83%	20-150%
	d9-EtFOSE	88%	90%	20-150%
	13C2-4:2FTS	140%	111%	20-150%
	13C2-6:2FTS	108%	94%	20-150%
	13C2-8:2FTS	91%	88%	20-150%
	13C3-HFPO-DA	77%	76%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-DUP	4Q43449.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627
FC5316-2	4Q43448.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	FC5316-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.018 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0027	J	0.0023	J	16	30
307-24-4	Perfluorohexanoic acid	0.0017	J	0.0019	J	11	30
375-85-9	Perfluoroheptanoic acid	0.0011	J	0.0011	J	0	30
335-67-1	Perfluorooctanoic acid	0.0045 U		0.00080	J	200*	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
757124-72-4	4:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0055	J	0.0052	J	6	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
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5316
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96472-DUP	4Q43449.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627
FC5316-2	4Q43448.D	1	04/21/23	MV	04/19/23	OP96472	S4Q627

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC5316-1, FC5316-2

CAS No.	Compound	FC5316-2 ug/l	Q	DUP 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
914637-49-3	5:3 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	FC5316-2	Limits
	13C4-PFBA	96%	90%	20-150%
	13C5-PFPeA	101%	104%	20-150%
	13C5-PFHxA	105%	109%	20-150%
	13C4-PFHpA	108%	109%	20-150%
	13C8-PFOA	98%	103%	20-150%
	13C9-PFNA	108%	102%	20-150%
	13C6-PFDA	92%	100%	20-150%
	13C7-PFUnDA	83%	88%	20-150%
	13C2-PFDoDA	71%	75%	20-150%
	13C2-PFTeDA	53%	54%	20-150%
	13C3-PFBS	112%	118%	20-150%
	13C3-PFHxS	105%	110%	20-150%
	13C8-PFOS	100%	96%	20-150%
	13C8-FOSA	81%	70%	20-150%
	d3-MeFOSA	83%	71%	20-150%
	d5-EtFOSA	89%	77%	20-150%
	d3-MeFOSAA	106%	95%	20-150%
	d5-EtFOSAA	102%	98%	20-150%
	d7-MeFOSE	75%	65%	20-150%
	d9-EtFOSE	83%	72%	20-150%
	13C2-4:2FTS	104%	95%	20-150%
	13C2-6:2FTS	86%	89%	20-150%
	13C2-8:2FTS	72%	83%	20-150%
	13C3-HFPO-DA	83%	88%	20-150%

* = Outside of Control Limits.