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: FC2356

Sampling Date: 02/01/23

Report to:

AECOM, Inc
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Denver, CO 80237
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Total number of pages in report: 39

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: FC2356

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC2356-1	02/01/23	09:50	MDNT	02/02/23	AQ	Ground Water	AF-RHMW10-WGN01LF-2301W5
FC2356-2	02/01/23	10:10	MDNT	02/02/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2301W5
FC2356-3	02/01/23	12:20	MDNT	02/02/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2301W5
FC2356-4	02/01/23	11:50	MDNT	02/02/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2301W5

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC2356

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 2/10/2023 6:59:32 PM

On 02/02/2023, 3 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 1.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2356 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:** OP95329

Sample(s) FC2356-1MS, FC2356-2DUP were used as the QC samples indicated.

Sample(s) FC2356-3 have surrogates outside control limits.

FC2356-3 for EtFOSAA: Associated ID Standard outside control limits.

FC2356-3 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: FC2356
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/01/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC2356-1	**AF-RHMW10-WGN01LF-2301W5**					
No hits reported in this sample.						
FC2356-2	**AF-RHMW17-WGN01LF-2301W5**					
Perfluoropentanoic acid		4.5 J	9.3	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		2.0 J	4.6	0.93	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		5.4 J	19	7.4	ng/l	EPA DRAFT 1633
FC2356-3	**AF-RHMW17D-WGN01LF-2301W5**					
6:2 Fluorotelomer sulfonate		25.6	19	7.4	ng/l	EPA DRAFT 1633
FC2356-4	**AF-RHMW17D-WQFB01-2301W5**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: AF-RHMW10-WGN01LF-2301W5
Lab Sample ID: FC2356-1
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 02/01/23
Date Received: 02/02/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q13330.D	1	02/09/23 20:31	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.4	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.4	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.88 U	4.4	0.88	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	4.4	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.4	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.4	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.4	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	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.4	1.8	0.59	ng/l	
31506-32-8	MeFOSA	1.8 U	4.4	1.8	0.88	ng/l	
4151-50-2	EtFOSA	1.8 U	4.4	1.8	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-RHMW10-WGN01LF-2301W5		
Lab Sample ID:	FC2356-1	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
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	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	8.8 U	44	8.8	3.8	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.5	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.5 U	18	3.5	0.88	ng/l	
919005-14-4	ADONA	3.5 U	18	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	8.8	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	8.8	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	8.8	3.5	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	18	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	18	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	8.8	1.8	0.68	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	22	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	108%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	103%		20-150%
	13C7-PFUnDA	89%		20-150%
	13C2-PFDoDA	84%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	107%		20-150%
	13C3-PFHxS	105%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW10-WGN01LF-2301W5		
Lab Sample ID:	FC2356-1	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	92%		20-150%
	13C8-FOSA	107%		20-150%
	d3-MeFOSA	101%		20-150%
	d5-EtFOSA	101%		20-150%
	d3-MeFOSAA	106%		20-150%
	d5-EtFOSAA	100%		20-150%
	d7-MeFOSE	98%		20-150%
	d9-EtFOSE	99%		20-150%
	13C2-4:2FTS	116%		20-150%
	13C2-6:2FTS	121%		20-150%
	13C2-8:2FTS	112%		20-150%
	13C3-HFPO-DA	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-RHMW17-WGN01LF-2301W5		
Lab Sample ID:	FC2356-2	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
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	6Q13332.D	1	02/09/23 20:59	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	19	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	4.5	9.3	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	2.0	4.6	0.93	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.6	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.6	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.6	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.6	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.6	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	5.4	19	7.4	3.2	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.6	1.9	0.62	ng/l	
31506-32-8	MeFOSA	1.9 U	4.6	1.9	0.93	ng/l	
4151-50-2	EtFOSA	1.9 U	4.6	1.9	0.93	ng/l	

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Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2301W5		
Lab Sample ID:	FC2356-2	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
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	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.3 U	46	9.3	4.1	ng/l	
1691-99-2	EtFOSE	19 U	46	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.7 U	19	3.7	0.93	ng/l	
919005-14-4	ADONA	3.7 U	19	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	9.3	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	9.3	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	9.3	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	19	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	19	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	9.3	1.9	0.72	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	23	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	107%		20-150%
	13C5-PFPeA	114%		20-150%
	13C5-PFHxA	115%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	104%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	87%		20-150%
	13C2-PFTeDA	81%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	105%		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-RHMW17-WGN01LF-2301W5		
Lab Sample ID:	FC2356-2	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
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	103%		20-150%
	13C8-FOSA	100%		20-150%
	d3-MeFOSA	99%		20-150%
	d5-EtFOSA	107%		20-150%
	d3-MeFOSAA	98%		20-150%
	d5-EtFOSAA	102%		20-150%
	d7-MeFOSE	97%		20-150%
	d9-EtFOSE	102%		20-150%
	13C2-4:2FTS	131%		20-150%
	13C2-6:2FTS	110%		20-150%
	13C2-8:2FTS	122%		20-150%
	13C3-HFPO-DA	118%		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-RHMW17D-WGN01LF-2301W5
Lab Sample ID: FC2356-3 **Date Sampled:** 02/01/23
Matrix: AQ - Ground Water **Date Received:** 02/02/23
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	6Q13334.D	1	02/09/23 21:27	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	19	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.3	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.6	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.6	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.6	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.6	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.6	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	25.6	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.6	1.9	0.62	ng/l	
31506-32-8	MeFOSA	1.9 U	4.6	1.9	0.93	ng/l	
4151-50-2	EtFOSA	1.9 U	4.6	1.9	0.93	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2301W5		
Lab Sample ID:	FC2356-3	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
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	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA [a]	3.7 U	4.6	3.7	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.3 U	46	9.3	4.1	ng/l	
1691-99-2	EtFOSE	19 U	46	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.7 U	19	3.7	0.93	ng/l	
919005-14-4	ADONA	3.7 U	19	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	9.3	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	9.3	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	9.3	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	19	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	19	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	9.3	1.9	0.72	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	23	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	113%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	108%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	111%		20-150%
	13C9-PFNA	104%		20-150%
	13C6-PFDA	111%		20-150%
	13C7-PFUnDA	107%		20-150%
	13C2-PFDoDA	100%		20-150%
	13C2-PFTeDA	81%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	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-2301W5		
Lab Sample ID:	FC2356-3	**Date Sampled:**	02/01/23
Matrix:	AQ - Ground Water	**Date Received:**	02/02/23
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	107%		20-150%
	13C8-FOSA	124%		20-150%
	d3-MeFOSA	112%		20-150%
	d5-EtFOSA	106%		20-150%
	d3-MeFOSAA	142%		20-150%
	d5-EtFOSAA	159% [b]		20-150%
	d7-MeFOSE	116%		20-150%
	d9-EtFOSE	120%		20-150%
	13C2-4:2FTS	112%		20-150%
	13C2-6:2FTS	93%		20-150%
	13C2-8:2FTS	97%		20-150%
	13C3-HFPO-DA	116%		20-150%

(a) Associated ID Standard outside control limits.
(b) 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-WQFB01-2301W5		
Lab Sample ID:	FC2356-4	**Date Sampled:**	02/01/23
Matrix:	AQ - Field Blank Water	**Date Received:**	02/02/23
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	6Q13335.D	1	02/09/23 21:41	MV	02/06/23 09:00	OP95329	S6Q203
Run #2							

	Initial Volume	Final Volume
Run #1	550 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	9.1	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.5	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.5	1.8	0.61	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.91	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.91	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2301W5		
Lab Sample ID:	FC2356-4	**Date Sampled:**	02/01/23
Matrix:	AQ - Field Blank Water	**Date Received:**	02/02/23
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	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.1 U	45	9.1	4.0	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.7	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.91	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	9.1	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	9.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	9.1	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	18	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	18	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	9.1	1.8	0.71	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	23	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	111%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	109%		20-150%
	13C9-PFNA	110%		20-150%
	13C6-PFDA	116%		20-150%
	13C7-PFUnDA	104%		20-150%
	13C2-PFDoDA	94%		20-150%
	13C2-PFTeDA	99%		20-150%
	13C3-PFBS	115%		20-150%
	13C3-PFHxS	116%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2301W5		
Lab Sample ID:	FC2356-4	**Date Sampled:**	02/01/23
Matrix:	AQ - Field Blank Water	**Date Received:**	02/02/23
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	107%		20-150%
	13C8-FOSA	96%		20-150%
	d3-MeFOSA	95%		20-150%
	d5-EtFOSA	98%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	98%		20-150%
	d7-MeFOSE	99%		20-150%
	d9-EtFOSE	99%		20-150%
	13C2-4:2FTS	121%		20-150%
	13C2-6:2FTS	114%		20-150%
	13C2-8:2FTS	106%		20-150%
	13C3-HFPO-DA	118%		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

FC2356

SGS

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

SOC #: 2301W5AFSG03

SGS - ORLANDO JOB #: PAGE 1 OF 1

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: M. Grasing Sampler 2:

Project Information

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

Analytical Information

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	NACH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW10-WGN01LF-2301W5	2.1.23	0952	MG,LH,JT	GW	3		X								X	

MD 02/01/23

MD 02/01/23

INITIAL ASSESSMENT: ZB

LABEL VERIFICATION: CM

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 086-2334094O

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 AECOM	2.1.23 1330	2 AECOM	3 AECOM	2/1/23 1430	4 2/2/23 1400
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): 1.4 IR1

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FC2356: Chain of Custody
Page 1 of 4

SGS

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Chain of Custody

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

FC2356

SGS - ORLANDO JOB # :

COC #: 2301W5AFSG10

PAGE 1 OF 1

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: NOAH TURNER **Sampler 2:** ANDY YOUNG

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

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	COLLECTION 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
2	AF-RHMW17-WGN01LF-2301W5	2/1/23	1010	NT, AY,	GW	3		X								X	

NT 2/1/23

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 016-23340940

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 AECOM	2/1/23 1100	2 AECOM	3 AECOM	2/1/23 1430	4 2/2/23 1400
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): 1-9 IR1

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FC2356: Chain of Custody
Page 2 of 4

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Chain of Custody

FC2356

SGS - ORLANDO JOB # :

COC #: 2301W5AFSG11

PAGE 1 OF 1

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TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

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:** Kallan Wilde **Sampler 2:** Andy Young	**Client Purchase Order #**		

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
3	AF-RHMW17D-WGN01LF-2301W5	2/1/23	1220	KW, NT, AY	GW	3		X								X	
4	AF-RHMW17D-WQFB01-2301W5	2/1/23	1150	KW, NT, AY	GW	3		X								X	

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 016-23340940

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 Andy Young AY SJ/AECOM	2/1/23 1345	2 AECOM	3 AECOM	2/1/23 1430	4 2/2/23 1400
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.4 IR1

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FC2356: Chain of Custody
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SGS Sample Receipt Summary

Job Number: FC2356 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/2/2023 2:00:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-23340940

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.4);

Cooler Temps (Corrected) °C: Cooler 1: (1.6);

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 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: ZANEB Date: 2/2/2023 2:00:00 PM Reviewer: NS Date: 2/9/2023

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2356
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/01/23

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 FC2356

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-IBLK	6Q13305.D	1	02/09/23	MV	n/a	n/a	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	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	0.0018	0.0050	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0034	0.0050	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	0.0174	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0300	0.050	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-1	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: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-IBLK	6Q13305.D	1	02/09/23	MV	n/a	n/a	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-3	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	98%	20-150%
	13C5-PFHxA	97%	20-150%
	13C4-PFHpA	101%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	107%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	103%	20-150%
	13C3-PFBS	110%	20-150%
	13C3-PFHxS	107%	20-150%
	13C8-PFOS	103%	20-150%
	13C8-FOSA	106%	20-150%
	d3-MeFOSA	101%	20-150%
	d5-EtFOSA	108%	20-150%
	d3-MeFOSAA	98%	20-150%
	d5-EtFOSAA	102%	20-150%
	d7-MeFOSE	95%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	124%	20-150%
	13C2-6:2FTS	116%	20-150%
	13C2-8:2FTS	119%	20-150%
	13C3-HFPO-DA	103%	20-150%

Continuing Calibration Blank

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-ICCB	6Q13326.D	1	02/09/23	MV	n/a	n/a	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	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: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q203-ICCB	6Q13326.D	1	02/09/23	MV	n/a	n/a	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-3	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	104%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	107%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	98%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	104%	20-150%
	13C3-PFBS	105%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	104%	20-150%
	13C8-FOSA	111%	20-150%
	d3-MeFOSAA	109%	20-150%
	d5-EtFOSAA	106%	20-150%
	13C2-4:2FTS	117%	20-150%
	13C2-6:2FTS	116%	20-150%
	13C2-8:2FTS	105%	20-150%

Method Blank Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MB	6Q13329.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	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: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MB	6Q13329.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-3	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	108%	20-150%
	13C5-PFPeA	106%	20-150%
	13C5-PFHxA	105%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	117%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	94%	20-150%
	13C2-PFTeDA	83%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	90%	20-150%
	d3-MeFOSA	79%	20-150%
	d5-EtFOSA	80%	20-150%
	d3-MeFOSAA	101%	20-150%
	d5-EtFOSAA	85%	20-150%
	d7-MeFOSE	84%	20-150%
	d9-EtFOSE	88%	20-150%
	13C2-4:2FTS	124%	20-150%
	13C2-6:2FTS	123%	20-150%
	13C2-8:2FTS	114%	20-150%
	13C3-HFPO-DA	109%	20-150%

Blank Spike Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-LLBS	6Q13328.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0366	92	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0190	95	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0095	95	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0092	92	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0101	101	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0081	81	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0085	85	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0097	97	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0085	85	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0091	91	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0097	97	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0093	105	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0085	90	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0078	85	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0096	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0085	92	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0088	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0086	89	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0080	82	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0326	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0376	99	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0382	99	40-150
754-91-6	PFOSA	0.01	0.0086	86	40-150
31506-32-8	MeFOSA	0.01	0.0086	86	40-150
4151-50-2	EtFOSA	0.01	0.0083	83	40-150
2355-31-9	MeFOSAA	0.01	0.010	100	40-150
2991-50-6	EtFOSAA	0.01	0.0086	86	40-150
24448-09-7	MeFOSE	0.1	0.0943	94	40-150
1691-99-2	EtFOSE	0.1	0.0905	91	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0369	92	40-150
919005-14-4	ADONA	0.0378	0.0364	96	40-150
377-73-1	PFMPA	0.02	0.0193	97	40-150
863090-89-5	PFMBA	0.02	0.0197	99	40-150
151772-58-6	NFDHA	0.02	0.0201	101	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0349	93	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0355	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-LLBS	6Q13328.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0169	95	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0349	70	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.218	87	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.234	94	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	117%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	117%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	112%	20-150%
	13C6-PFDA	118%	20-150%
	13C7-PFUnDA	108%	20-150%
	13C2-PFDoDA	108%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	114%	20-150%
	13C8-FOSA	115%	20-150%
	d3-MeFOSA	102%	20-150%
	d5-EtFOSA	102%	20-150%
	d3-MeFOSAA	116%	20-150%
	d5-EtFOSAA	118%	20-150%
	d7-MeFOSE	95%	20-150%
	d9-EtFOSE	98%	20-150%
	13C2-4:2FTS	132%	20-150%
	13C2-6:2FTS	116%	20-150%
	13C2-8:2FTS	113%	20-150%
	13C3-HFPO-DA	117%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-BS	6Q13327.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0957	96	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0483	97	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0246	98	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0243	97	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0240	96	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0250	100	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0235	94	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0253	101	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0243	97	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0244	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0235	94	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0232	105	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0211	90	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0219	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0223	94	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0228	98	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0238	99	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0224	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0216	89	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0862	92	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0904	95	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0931	97	40-150
754-91-6	PFOSA	0.025	0.0209	84	40-150
31506-32-8	MeFOSA	0.025	0.0217	87	40-150
4151-50-2	EtFOSA	0.025	0.0222	89	40-150
2355-31-9	MeFOSAA	0.025	0.0247	99	40-150
2991-50-6	EtFOSAA	0.025	0.0234	94	40-150
24448-09-7	MeFOSE	0.25	0.229	92	40-150
1691-99-2	EtFOSE	0.25	0.214	86	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0985	99	40-150
919005-14-4	ADONA	0.0945	0.0951	101	40-150
377-73-1	PFMPA	0.05	0.0268	54	40-150
863090-89-5	PFMBA	0.05	0.0488	98	40-150
151772-58-6	NFDHA	0.05	0.0506	101	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.0892	95	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.0929	98	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-BS	6Q13327.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0455	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0758	61	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.614	98	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.604	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	29%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	114%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	122%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	128%	20-150%
	13C7-PFUnDA	115%	20-150%
	13C2-PFDoDA	112%	20-150%
	13C2-PFTeDA	114%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	112%	20-150%
	13C8-FOSA	119%	20-150%
	d3-MeFOSA	109%	20-150%
	d5-EtFOSA	105%	20-150%
	d3-MeFOSAA	113%	20-150%
	d5-EtFOSAA	113%	20-150%
	d7-MeFOSE	106%	20-150%
	d9-EtFOSE	109%	20-150%
	13C2-4:2FTS	136%	20-150%
	13C2-6:2FTS	135%	20-150%
	13C2-8:2FTS	124%	20-150%
	13C3-HFPO-DA	116%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MS	6Q13331.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-1	6Q13330.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018	U	0.0877	0.0871	99	40-150
2706-90-3	Perfluoropentanoic acid	0.0088	U	0.0439	0.0445	101	40-150
307-24-4	Perfluorohexanoic acid	0.0044	U	0.0219	0.0215	98	40-150
375-85-9	Perfluoroheptanoic acid	0.0044	U	0.0219	0.0217	99	40-150
335-67-1	Perfluorooctanoic acid	0.0044	U	0.0219	0.0226	103	40-150
375-95-1	Perfluorononanoic acid	0.0044	U	0.0219	0.0213	97	40-150
335-76-2	Perfluorodecanoic acid	0.0044	U	0.0219	0.0213	97	40-150
2058-94-8	Perfluoroundecanoic acid	0.0044	U	0.0219	0.0231	105	40-150
307-55-1	Perfluorododecanoic acid	0.0044	U	0.0219	0.0203	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.0044	U	0.0219	0.0212	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.0044	U	0.0219	0.0228	104	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0044	U	0.0195	0.0186	96	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0206	0.0207	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0044	U	0.02	0.0203	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0044	U	0.0209	0.0231	111	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0044	U	0.0204	0.0209	103	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0044	U	0.0211	0.0209	99	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0044	U	0.0212	0.0184	87	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.0213	0.0189	89	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0822	0.0794	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0833	0.0777	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0842	0.0856	102	40-150
754-91-6	PFOSA	0.0044	U	0.0219	0.0206	94	40-150
31506-32-8	MeFOSA	0.0044	U	0.0219	0.0199	91	40-150
4151-50-2	EtFOSA	0.0044	U	0.0219	0.0193	88	40-150
2355-31-9	MeFOSAA	0.0044	U	0.0219	0.0223	102	40-150
2991-50-6	EtFOSAA	0.0044	U	0.0219	0.0213	97	40-150
24448-09-7	MeFOSE	0.044	U	0.219	0.217	99	40-150
1691-99-2	EtFOSE	0.044	U	0.219	0.202	92	40-150
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0877	0.0881	100	40-150
919005-14-4	ADONA	0.018	U	0.0829	0.0809	98	40-150
377-73-1	PFMPA	0.0088	U	0.0439	0.0453	103	40-150
863090-89-5	PFMBA	0.0088	U	0.0439	0.0448	102	40-150
151772-58-6	NFDHA	0.0088	U	0.0439	0.0433	99	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.082	0.0761	93	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0829	0.0691	83	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-MS	6Q13331.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-1	6Q13330.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0088	U	0.039	0.0388	99	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	0.11	0.0828	76	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.548	0.543	99	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.548	0.530	97	40-150

CAS No.	ID Standard Recoveries	MS	FC2356-1	Limits
	13C4-PFBA	104%	109%	20-150%
	13C5-PFPeA	113%	109%	20-150%
	13C5-PFHxA	115%	110%	20-150%
	13C4-PFHpA	111%	108%	20-150%
	13C8-PFOA	102%	106%	20-150%
	13C9-PFNA	109%	101%	20-150%
	13C6-PFDA	95%	103%	20-150%
	13C7-PFUnDA	89%	89%	20-150%
	13C2-PFDoDA	86%	84%	20-150%
	13C2-PFTeDA	79%	80%	20-150%
	13C3-PFBS	110%	107%	20-150%
	13C3-PFHxS	106%	105%	20-150%
	13C8-PFOS	98%	92%	20-150%
	13C8-FOSA	112%	107%	20-150%
	d3-MeFOSA	99%	101%	20-150%
	d5-EtFOSA	102%	101%	20-150%
	d3-MeFOSAA	105%	106%	20-150%
	d5-EtFOSAA	99%	100%	20-150%
	d7-MeFOSE	91%	98%	20-150%
	d9-EtFOSE	93%	99%	20-150%
	13C2-4:2FTS	120%	116%	20-150%
	13C2-6:2FTS	118%	121%	20-150%
	13C2-8:2FTS	105%	112%	20-150%
	13C3-HFPO-DA	115%	110%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-DUP	6Q13333.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-2	6Q13332.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.019 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0045	J	0.0045	J	0	30
307-24-4	Perfluorohexanoic acid	0.0020	J	0.0021	J	5	30
375-85-9	Perfluoroheptanoic acid	0.0046 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0046 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0046 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0046 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0046 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0046 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0046 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0046 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0046 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0046 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0046 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0046 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0046 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0046 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0054	J	0.0050	J	8	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
754-91-6	PFOSA	0.0046 U		ND		nc	30
31506-32-8	MeFOSA	0.0046 U		ND		nc	30
4151-50-2	EtFOSA	0.0046 U		ND		nc	30
2355-31-9	MeFOSAA	0.0046 U		ND		nc	30
2991-50-6	EtFOSAA	0.0046 U		ND		nc	30
24448-09-7	MeFOSE	0.046 U		ND		nc	30
1691-99-2	EtFOSE	0.046 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.019 U		ND		nc	30
919005-14-4	ADONA	0.019 U		ND		nc	30
377-73-1	PFMPA	0.0093 U		ND		nc	30
863090-89-5	PFMBA	0.0093 U		ND		nc	30
151772-58-6	NFDHA	0.0093 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.019 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.019 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2356
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95329-DUP	6Q13333.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203
FC2356-2	6Q13332.D	1	02/09/23	MV	02/06/23	OP95329	S6Q203

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

FC2356-1, FC2356-2, FC2356-3, FC2356-4

CAS No.	Compound	FC2356-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0093	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.023	U	ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.12	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.12	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC2356-2	Limits
	13C4-PFBA	105%	107%	20-150%
	13C5-PFPeA	115%	114%	20-150%
	13C5-PFHxA	119%	115%	20-150%
	13C4-PFHpA	113%	111%	20-150%
	13C8-PFOA	110%	104%	20-150%
	13C9-PFNA	107%	98%	20-150%
	13C6-PFDA	105%	102%	20-150%
	13C7-PFUnDA	95%	99%	20-150%
	13C2-PFDoDA	94%	87%	20-150%
	13C2-PFTeDA	87%	81%	20-150%
	13C3-PFBS	108%	109%	20-150%
	13C3-PFHxS	112%	105%	20-150%
	13C8-PFOS	103%	103%	20-150%
	13C8-FOSA	112%	100%	20-150%
	d3-MeFOSA	108%	99%	20-150%
	d5-EtFOSA	106%	107%	20-150%
	d3-MeFOSAA	113%	98%	20-150%
	d5-EtFOSAA	106%	102%	20-150%
	d7-MeFOSE	106%	97%	20-150%
	d9-EtFOSE	108%	102%	20-150%
	13C2-4:2FTS	114%	131%	20-150%
	13C2-6:2FTS	119%	110%	20-150%
	13C2-8:2FTS	104%	122%	20-150%
	13C3-HFPO-DA	118%	118%	20-150%

* = Outside of Control Limits.