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

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC9640

Sampling Date: 09/13/23

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: 31

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 unless noted in the narrative, comments or footnotes.

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

Sections: 1 2 3 4 5 6

Table of Contents

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **5**
Section 4: Sample Results **6**
4.1: FC9640-1: AF-RHP02-WGN01LF-2309 7
4.2: FC9640-2: AF-RHP02-WGFD01LF-2309 10
Section 5: Misc. Forms **13**
5.1: Chain of Custody 14
5.2: QC Evaluation: DOD QSM5.x Limits 16
Section 6: MS Semi-volatiles - QC Data Summaries **17**
6.1: Method Blank Summary 18
6.2: Blank Spike Summary 24
6.3: Matrix Spike Summary 28
6.4: Duplicate Summary 30

SGS North America Inc.

Sample Summary

AECOM, INC.

Job No: FC9640

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC9640-1	09/13/23	12:05	AYLW	09/15/23	AQ	Ground Water	AF-RHP02-WGN01LF-2309
FC9640-2	09/13/23	12:05	AYLW	09/15/23	AQ	Ground Water	AF-RHP02-WGFD01LF-2309

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC9640

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 9/22/2023 2:50:26 PM

On 09/15/2023, 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 4.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC9640 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:** OP99077

Sample(s) FC9640-1MS, FC9640-2DUP were used as the QC samples indicated.

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

Narrative prepared by:

_____

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

Summary of Hits

Job Number: FC9640
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 09/13/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC9640-1	**AF-RHP02-WGN01LF-2309**					
Perfluorobutanoic acid		14.2	14	3.5	ng/l	EPA DRAFT 1633
Perfluoropentanoic acid		12.3	7.0	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		6.3	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		5.0	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid		5.8	3.5	0.88	ng/l	EPA DRAFT 1633
Perfluorononanoic acid		1.6 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid		4.3	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid		5.0	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanesulfonic acid		0.46 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid		16.0	3.5	1.8	ng/l	EPA DRAFT 1633
FC9640-2	**AF-RHP02-WGFD01LF-2309**					
Perfluorobutanoic acid		12.9 J	15	3.6	ng/l	EPA DRAFT 1633
Perfluoropentanoic acid		11.2	7.3	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		5.8	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		5.2	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid		5.2	3.6	0.91	ng/l	EPA DRAFT 1633
Perfluorononanoic acid		1.3 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid		3.6	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid		4.5	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid		11.4	3.6	1.8	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHP02-WGN01LF-2309		
Lab Sample ID:	FC9640-1	**Date Sampled:**	09/13/23
Matrix:	AQ - Ground Water	**Date Received:**	09/15/23
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	6Q24836.D	1	09/22/23 02:34	MV	09/19/23 10:30	OP99077	S6Q355
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	14.2	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	12.3	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	6.3	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	5.0	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	5.8	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.6	3.5	1.8	0.54	ng/l	J
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	4.3	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	5.0	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.46	3.5	1.8	0.44	ng/l	J
1763-23-1	Perfluorooctanesulfonic acid	16.0	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHP02-WGN01LF-2309		
Lab Sample ID:	FC9640-1	**Date Sampled:**	09/13/23
Matrix:	AQ - Ground Water	**Date Received:**	09/15/23
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	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l	
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	104%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	115%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	106%		20-150%
	13C6-PFDA	114%		20-150%
	13C7-PFUnDA	110%		20-150%
	13C2-PFDoDA	104%		20-150%
	13C2-PFTeDA	91%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	109%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHP02-WGN01LF-2309		
Lab Sample ID:	FC9640-1	**Date Sampled:**	09/13/23
Matrix:	AQ - Ground Water	**Date Received:**	09/15/23
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	106%		20-150%
	13C8-FOSA	85%		20-150%
	d3-MeFOSA	86%		20-150%
	d5-EtFOSA	88%		20-150%
	d3-MeFOSAA	105%		20-150%
	d5-EtFOSAA	90%		20-150%
	d7-MeFOSE	83%		20-150%
	d9-EtFOSE	88%		20-150%
	13C2-4:2FTS	104%		20-180%
	13C2-6:2FTS	114%		20-180%
	13C2-8:2FTS	99%		20-180%
	13C3-HFPO-DA	114%		20-150%

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

Report of Analysis

Client Sample ID: AF-RHP02-WGFD01LF-2309
Lab Sample ID: FC9640-2
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 09/13/23
Date Received: 09/15/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24838.D	1	09/22/23 03:02	MV	09/19/23 10:30	OP99077	S6Q355
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	12.9	15	3.6	1.7	ng/l	J
2706-90-3	Perfluoropentanoic acid	11.2	7.3	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	5.8	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	5.2	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	5.2	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.3	3.6	1.8	0.55	ng/l	J
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	3.6	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	4.5	3.6	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	11.4	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHP02-WGFD01LF-2309		
Lab Sample ID:	FC9640-2	**Date Sampled:**	09/13/23
Matrix:	AQ - Ground Water	**Date Received:**	09/15/23
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	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%		20-150%
	13C5-PFPeA	113%		20-150%
	13C5-PFHxA	115%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	109%		20-150%
	13C9-PFNA	103%		20-150%
	13C6-PFDA	111%		20-150%
	13C7-PFUnDA	109%		20-150%
	13C2-PFDoDA	102%		20-150%
	13C2-PFTeDA	97%		20-150%
	13C3-PFBS	115%		20-150%
	13C3-PFHxS	111%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHP02-WGFD01LF-2309		
Lab Sample ID:	FC9640-2	**Date Sampled:**	09/13/23
Matrix:	AQ - Ground Water	**Date Received:**	09/15/23
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	113%		20-150%
	13C8-FOSA	86%		20-150%
	d3-MeFOSA	87%		20-150%
	d5-EtFOSA	94%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	95%		20-150%
	d7-MeFOSE	86%		20-150%
	d9-EtFOSE	94%		20-150%
	13C2-4:2FTS	112%		20-180%
	13C2-6:2FTS	118%		20-180%
	13C2-8:2FTS	101%		20-180%
	13C3-HFPO-DA	117%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

FC9640

COC #: 2309AFSG22

PAGE 1 OF 1

SGS North America Inc - Orlando
Chain of Custody

SGS - ORLANDO JOB # :

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
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		
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 #** 23FO104 - 60697810		
Phone #: 303-796-4624 / 808-954-4512	**Fax #**		
Sampler(s) Name(s) (Printed) **Sampler 1:** Andy Young **Sampler 2:** Liz Walker	**Client Purchase Order #** 151253		

PFAS EPA Draft 1633

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

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	MeOH-ZnAc	DI WATER	MEOH	LAB USE ONLY
1	AF-RHP02-WGN01LF-2309	9/13/23	1205	AY, LW	GW	3		X							X	
2	AF-RHP02-WGFD01LF-2309	9/13/23	1205	AY, LW	GW	3		X							X	

9/13/23

9/13/23

INITIAL ASSESSMENT

LABEL VERIFICATION

Turnaround Time (Business days)	Data Deliverable Information	Comments / Remarks
10 Day (Business) Approved By: / Date:	[ ] COMMERCIAL "A" (RESULTS ONLY)	EDMS upload database: JBPHE
7 Day	[ ] COMMERCIAL "B" (RESULTS PLUS QC)	EDMS Coverage: AFFF Assessment Sampling GW
[5 Day]	[ ] REDT1 (EPA LEVEL 3)	
3 Day *RUSH*	[x] FULLT1 (EPA LEVEL 4)	
2 Day *RUSH*	[x] EDD'S	
1 Day *RUSH*		
Other		
Rush T/A Data Available VIA Email or Lablink		

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 Andy Young /AECOM	9/13/23/1515	2 Alex Edmonds /Eurofins	3 Simone Ray AECOM	9/14/23 0932-3	4 9/15/23 800
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

PFAS_COCs_ALL_09112023-AE.xls Rev 031318

4.8 IR# 1

FC9640: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: fc9640 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression Syst

Date / Time Received: 9/15/2023 8:00:00 AM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-25168496

Cooler Temps (Raw Measured) °C: Cooler 1: (4.8);

Cooler Temps (Corrected) °C: Cooler 1: (4.6);

Cooler Informatio	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 presented properly	☑		☐	
3. Suffiient volume/containers recv'd for analysi	☑		☐	
4. Condition of sample:	Intact			
5. Sample recv'd within HT	☑		☐	
6. Dates/Times/IDs on COC match sample labe	☒		☐	
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 Lab Filtered Metals

Test Strip Lot #s: pH 0-3: _____ pH 10-12: _____ Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot _____

Comments

SM001
Rev. Date 05/04/17

Technician: SHAYLAP Date: 9/15/2023 8:00:00 AM Reviewer: SP Date: 09/15/2023

FC9640: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FC9640
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 09/13/23

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 FC9640

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: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q355-IBLK	6Q24819.D	1	09/21/23	MV	n/a	n/a	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q355-IBLK	6Q24819.D	1	09/21/23	MV	n/a	n/a	S6Q355

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

FC9640-1, FC9640-2

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

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	97%	20-150%
	13C5-PFHxA	95%	20-150%
	13C4-PFHpA	98%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	113%	20-150%
	13C6-PFDA	104%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	99%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	110%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	98%	20-150%
	13C2-4:2FTS	106%	20-180%
	13C2-6:2FTS	113%	20-180%
	13C2-8:2FTS	107%	20-180%

Continuing Calibration Blank

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q355-ICCB	6Q24835.D	1	09/22/23	MV	n/a	n/a	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q355-ICCB	6Q24835.D	1	09/22/23	MV	n/a	n/a	S6Q355

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

FC9640-1, FC9640-2

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

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	102%	20-150%
	13C5-PFPeA	100%	20-150%
	13C5-PFHxA	97%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	98%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	97%	20-150%
	13C2-PFTeDA	105%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	108%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSAA	101%	20-150%
	d5-EtFOSAA	101%	20-150%
	13C2-4:2FTS	106%	20-180%
	13C2-6:2FTS	107%	20-180%
	13C2-8:2FTS	112%	20-180%

Method Blank Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-MB	6Q24826.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-MB	6Q24826.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

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

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	112%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	118%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	109%	20-150%
	13C9-PFNA	103%	20-150%
	13C6-PFDA	114%	20-150%
	13C7-PFUnDA	113%	20-150%
	13C2-PFDoDA	108%	20-150%
	13C2-PFTeDA	95%	20-150%
	13C3-PFBS	111%	20-150%
	13C3-PFHxS	111%	20-150%
	13C8-PFOS	119%	20-150%
	13C8-FOSA	70%	20-150%
	d3-MeFOSA	79%	20-150%
	d5-EtFOSA	88%	20-150%
	d3-MeFOSAA	118%	20-150%
	d5-EtFOSAA	111%	20-150%
	d7-MeFOSE	73%	20-150%
	d9-EtFOSE	85%	20-150%
	13C2-4:2FTS	120%	20-180%
	13C2-6:2FTS	125%	20-180%
	13C2-8:2FTS	117%	20-180%
	13C3-HFPO-DA	120%	20-150%

Blank Spike Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-LLBS	6Q24825.D	1	09/21/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0312	104	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0156	104	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0074	99	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0081	108	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0083	111	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0074	99	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0084	112	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0079	105	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0072	96	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0073	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0075	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0071	107	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0071	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0065	95	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0077	108	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0076	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0079	109	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0072	99	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0070	96	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0308	110	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0299	105	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0280	97	40-150
754-91-6	PFOSA	0.0075	0.0081	108	40-150
31506-32-8	MeFOSA	0.015	0.0157	105	40-150
4151-50-2	EtFOSA	0.015	0.0151	101	40-150
2355-31-9	MeFOSAA	0.0075	0.0081	108	40-150
2991-50-6	EtFOSAA	0.0075	0.0086	115	40-150
24448-09-7	MeFOSE	0.0375	0.0379	101	40-150
1691-99-2	EtFOSE	0.0375	0.0384	102	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0155	103	40-150
919005-14-4	ADONA	0.0142	0.0157	111	40-150
377-73-1	PFMPA	0.015	0.0156	104	40-150
863090-89-5	PFMBA	0.015	0.0156	104	40-150
151772-58-6	NFDHA	0.015	0.0151	101	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0146	104	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0140	99	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-LLBS	6Q24825.D	1	09/21/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0140	105	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0289	77	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.181	97	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	112%	20-150%
	13C5-PFPeA	111%	20-150%
	13C5-PFHxA	112%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	103%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	115%	20-150%
	13C2-PFDoDA	112%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	113%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	112%	20-150%
	13C8-FOSA	81%	20-150%
	d3-MeFOSA	84%	20-150%
	d5-EtFOSA	91%	20-150%
	d3-MeFOSAA	112%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	91%	20-150%
	13C2-4:2FTS	118%	20-180%
	13C2-6:2FTS	123%	20-180%
	13C2-8:2FTS	121%	20-180%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-BS	6Q24824.D	1	09/21/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0976	98	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0495	99	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0239	96	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0241	96	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0234	94	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0252	101	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0240	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0231	92	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0231	92	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0210	84	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0236	94	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0219	99	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0232	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0224	98	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0215	90	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0214	92	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0235	98	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0225	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0220	91	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0930	99	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0919	97	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0914	95	40-150
754-91-6	PFOSA	0.025	0.0249	100	40-150
31506-32-8	MeFOSA	0.05	0.0490	98	40-150
4151-50-2	EtFOSA	0.05	0.0453	91	40-150
2355-31-9	MeFOSAA	0.025	0.0251	100	40-150
2991-50-6	EtFOSAA	0.025	0.0274	110	40-150
24448-09-7	MeFOSE	0.125	0.119	95	40-150
1691-99-2	EtFOSE	0.125	0.113	90	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0492	98	40-150
919005-14-4	ADONA	0.0473	0.0453	96	40-150
377-73-1	PFMPA	0.05	0.0484	97	40-150
863090-89-5	PFMBA	0.05	0.0499	100	40-150
151772-58-6	NFDHA	0.05	0.0486	97	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0438	94	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0453	96	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-BS	6Q24824.D	1	09/21/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0439	99	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.107	86	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.601	96	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.603	96	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	86%	20-150%
	13C5-PFPeA	109%	20-150%
	13C5-PFHxA	110%	20-150%
	13C4-PFHpA	109%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	114%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	113%	20-150%
	13C2-PFDoDA	109%	20-150%
	13C2-PFTeDA	98%	20-150%
	13C3-PFBS	105%	20-150%
	13C3-PFHxS	108%	20-150%
	13C8-PFOS	122%	20-150%
	13C8-FOSA	90%	20-150%
	d3-MeFOSA	91%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	115%	20-150%
	d5-EtFOSAA	111%	20-150%
	d7-MeFOSE	81%	20-150%
	d9-EtFOSE	91%	20-150%
	13C2-4:2FTS	111%	20-180%
	13C2-6:2FTS	116%	20-180%
	13C2-8:2FTS	113%	20-180%
	13C3-HFPO-DA	113%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-MS	6Q24837.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355
FC9640-1	6Q24836.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	FC9640-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0142		0.0943	0.116	108	40-150
2706-90-3	Perfluoropentanoic acid	0.0123		0.0472	0.0649	112	40-150
307-24-4	Perfluorohexanoic acid	0.0063		0.0236	0.0305	103	40-150
375-85-9	Perfluoroheptanoic acid	0.0050		0.0236	0.0307	109	40-150
335-67-1	Perfluorooctanoic acid	0.0058		0.0236	0.0311	107	40-150
375-95-1	Perfluorononanoic acid	0.0016	J	0.0236	0.0262	104	40-150
335-76-2	Perfluorodecanoic acid	0.0035	U	0.0236	0.0246	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0035	U	0.0236	0.0226	96	40-150
307-55-1	Perfluorododecanoic acid	0.0035	U	0.0236	0.0247	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.0035	U	0.0236	0.0230	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.0035	U	0.0236	0.0264	112	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0043		0.0209	0.0265	106	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0222	0.0242	109	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0050		0.0216	0.0266	100	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00046	J	0.0225	0.0253	111	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0160		0.0219	0.0407	113	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0035	U	0.0227	0.0237	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0035	U	0.0228	0.0213	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.0229	0.0211	92	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0884	0.0970	110	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0896	0.0918	102	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0906	0.104	115	40-150
754-91-6	PFOSA	0.0035	U	0.0236	0.0254	108	40-150
31506-32-8	MeFOSA	0.0070	U	0.0472	0.0515	109	40-150
4151-50-2	EtFOSA	0.0070	U	0.0472	0.0478	101	40-150
2355-31-9	MeFOSAA	0.0044	U	0.0236	0.0242	103	40-150
2991-50-6	EtFOSAA	0.0044	U	0.0236	0.0285	121	40-150
24448-09-7	MeFOSE	0.035	U	0.118	0.129	109	40-150
1691-99-2	EtFOSE	0.035	U	0.118	0.124	105	40-150
13252-13-6	HFPO-DA (GenX)	0.0035	U	0.0472	0.0483	102	40-150
919005-14-4	ADONA	0.0070	U	0.0446	0.0479	107	40-150
377-73-1	PFMPA	0.0070	U	0.0472	0.0519	110	40-150
863090-89-5	PFMBA	0.0070	U	0.0472	0.0531	113	40-150
151772-58-6	NFDHA	0.0070	U	0.0472	0.0485	103	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0070	U	0.0441	0.0457	104	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0070	U	0.0446	0.0404	91	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-MS	6Q24837.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355
FC9640-1	6Q24836.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	FC9640-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0070	U	0.042	0.0429	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018	U	0.118	0.0955	81	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.088	U	0.59	0.599	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.088	U	0.59	0.633	107	40-150

CAS No.	ID Standard Recoveries	MS	FC9640-1	Limits
	13C4-PFBA	97%	104%	20-150%
	13C5-PFPeA	100%	109%	20-150%
	13C5-PFHxA	106%	111%	20-150%
	13C4-PFHpA	103%	115%	20-150%
	13C8-PFOA	94%	106%	20-150%
	13C9-PFNA	97%	106%	20-150%
	13C6-PFDA	105%	114%	20-150%
	13C7-PFUnDA	99%	110%	20-150%
	13C2-PFDoDA	92%	104%	20-150%
	13C2-PFTeDA	83%	91%	20-150%
	13C3-PFBS	105%	108%	20-150%
	13C3-PFHxS	103%	109%	20-150%
	13C8-PFOS	90%	106%	20-150%
	13C8-FOSA	74%	85%	20-150%
	d3-MeFOSA	77%	86%	20-150%
	d5-EtFOSA	84%	88%	20-150%
	d3-MeFOSAA	92%	105%	20-150%
	d5-EtFOSAA	83%	90%	20-150%
	d7-MeFOSE	74%	83%	20-150%
	d9-EtFOSE	80%	88%	20-150%
	13C2-4:2FTS	96%	104%	20-180%
	13C2-6:2FTS	102%	114%	20-180%
	13C2-8:2FTS	97%	99%	20-180%
	13C3-HFPO-DA	108%	114%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-DUP	6Q24839.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355
FC9640-2	6Q24838.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	FC9640-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0129	J	0.0144	J	11	30
2706-90-3	Perfluoropentanoic acid	0.0112		0.0124		10	30
307-24-4	Perfluorohexanoic acid	0.0058		0.0065		11	30
375-85-9	Perfluoroheptanoic acid	0.0052		0.0055		6	30
335-67-1	Perfluorooctanoic acid	0.0052		0.0057		9	30
375-95-1	Perfluorononanoic acid	0.0013	J	0.0013	J	0	30
335-76-2	Perfluorodecanoic acid	0.0036 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0036 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0036 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0036 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0036 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0036		0.0040		11	30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0045		0.0054		18	30
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0114		0.0149		27	30
68259-12-1	Perfluorononanesulfonic acid	0.0036 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0036 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	0.018 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
754-91-6	PFOSA	0.0036 U		ND		nc	30
31506-32-8	MeFOSA	0.0073 U		ND		nc	30
4151-50-2	EtFOSA	0.0073 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	0.036 U		ND		nc	30
1691-99-2	EtFOSE	0.036 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0036 U		ND		nc	30
919005-14-4	ADONA	0.0073 U		ND		nc	30
377-73-1	PFMPA	0.0073 U		ND		nc	30
863090-89-5	PFMBA	0.0073 U		ND		nc	30
151772-58-6	NFDHA	0.0073 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0073 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0073 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC9640
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99077-DUP	6Q24839.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355
FC9640-2	6Q24838.D	1	09/22/23	MV	09/19/23	OP99077	S6Q355

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

FC9640-1, FC9640-2

CAS No.	Compound	FC9640-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0073	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018	U	ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.091	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.091	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC9640-2	Limits
	13C4-PFBA	104%	109%	20-150%
	13C5-PFPeA	102%	113%	20-150%
	13C5-PFHxA	105%	115%	20-150%
	13C4-PFHpA	106%	111%	20-150%
	13C8-PFOA	101%	109%	20-150%
	13C9-PFNA	100%	103%	20-150%
	13C6-PFDA	101%	111%	20-150%
	13C7-PFUnDA	94%	109%	20-150%
	13C2-PFDoDA	89%	102%	20-150%
	13C2-PFTeDA	76%	97%	20-150%
	13C3-PFBS	110%	115%	20-150%
	13C3-PFHxS	108%	111%	20-150%
	13C8-PFOS	105%	113%	20-150%
	13C8-FOSA	83%	86%	20-150%
	d3-MeFOSA	81%	87%	20-150%
	d5-EtFOSA	86%	94%	20-150%
	d3-MeFOSAA	100%	101%	20-150%
	d5-EtFOSAA	99%	95%	20-150%
	d7-MeFOSE	80%	86%	20-150%
	d9-EtFOSE	84%	94%	20-150%
	13C2-4:2FTS	103%	112%	20-180%
	13C2-6:2FTS	106%	118%	20-180%
	13C2-8:2FTS	95%	101%	20-180%
	13C3-HFPO-DA	105%	117%	20-150%

* = Outside of Control Limits.