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: FC2715

Sampling Date: 02/14/23

Report to:

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

Total number of pages in report: 41

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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SGS North America Inc.

Sample Summary

AECOM, INC.

Job No: FC2715

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC2715-1	02/14/23	09:45	NH	02/15/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2302W2
FC2715-2	02/14/23	09:45	NH	02/15/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2302W2
FC2715-3	02/14/23	10:30	NTAY	02/15/23	AQ	Ground Water	AF-HDMW225303-WGN01LF-2302W2
FC2715-4	02/14/23	11:55	NH	02/15/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2302W2
FC2715-5	02/14/23	12:40	NTAY	02/15/23	AQ	Ground Water	AF-RHMW10-WGN01LF-2302W2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC2715

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 2/23/2023 5:35:22 PM

On 02/15/2023, 5 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 1.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2715 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:** OP95501

Sample(s) FC2715-1MS, FC2715-4DUP 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: FC2715
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/14/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC2715-1	**AF-RHMW12A-WGN01LF-2302W2**					
Perfluoropentanoic acid		5.3 J	9.3	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		1.4 J	4.6	0.93	ng/l	EPA DRAFT 1633
FC2715-2	**AF-RHMW12A-WGFD01LF-2302W2**					
Perfluoropentanoic acid		5.3 J	9.6	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		1.6 J	4.8	0.96	ng/l	EPA DRAFT 1633
FC2715-3	**AF-HDMW225303-WGN01LF-2302W2**					
No hits reported in this sample.						
FC2715-4	**AF-RHMW16-WGN01LF-2302W2**					
No hits reported in this sample.						
FC2715-5	**AF-RHMW10-WGN01LF-2302W2**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2302W2		
Lab Sample ID:	FC2715-1	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	6Q14138.D	1	02/22/23 21:21	MV	02/16/23 09:00	OP95501	S6Q216
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	5.3	9.3	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	1.4	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	7.4 U	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-RHMW12A-WGN01LF-2302W2		
Lab Sample ID:	FC2715-1	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	3.7 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	116%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	112%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	112%		20-150%
	13C9-PFNA	112%		20-150%
	13C6-PFDA	107%		20-150%
	13C7-PFUnDA	95%		20-150%
	13C2-PFDoDA	87%		20-150%
	13C2-PFTeDA	79%		20-150%
	13C3-PFBS	113%		20-150%
	13C3-PFHxS	117%		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-RHMW12A-WGN01LF-2302W2		
Lab Sample ID:	FC2715-1	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	101%		20-150%
	13C8-FOSA	109%		20-150%
	d3-MeFOSA	106%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	95%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	98%		20-150%
	d9-EtFOSE	100%		20-150%
	13C2-4:2FTS	146%		20-150%
	13C2-6:2FTS	125%		20-150%
	13C2-8:2FTS	118%		20-150%
	13C3-HFPO-DA	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-RHMW12A-WGFD01LF-2302W2
Lab Sample ID: FC2715-2 **Date Sampled:** 02/14/23
Matrix: AQ - Ground Water **Date Received:** 02/15/23
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	6Q14140.D	1	02/22/23 21:49	MV	02/16/23 09:00	OP95501	S6Q216
Run #2							

	Initial Volume	Final Volume
Run #1	520 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	5.3	9.6	1.9	0.90	ng/l	J
307-24-4	Perfluorohexanoic acid	1.6	4.8	0.96	0.48	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	1.9 U	4.8	1.9	0.96	ng/l	
4151-50-2	EtFOSA	1.9 U	4.8	1.9	0.96	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2302W2		
Lab Sample ID:	FC2715-2	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	3.8 U	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.6 U	48	9.6	4.2	ng/l	
1691-99-2	EtFOSE	19 U	48	19	7.1	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.96	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.6	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	9.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.6	3.8	1.2	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.6	1.9	0.75	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	24	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	105%		20-150%
	13C5-PFPeA	106%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	109%		20-150%
	13C8-PFOA	96%		20-150%
	13C9-PFNA	103%		20-150%
	13C6-PFDA	98%		20-150%
	13C7-PFUnDA	87%		20-150%
	13C2-PFDoDA	80%		20-150%
	13C2-PFTeDA	75%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	108%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2302W2		
Lab Sample ID:	FC2715-2	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	98%		20-150%
	13C8-FOSA	105%		20-150%
	d3-MeFOSA	99%		20-150%
	d5-EtFOSA	94%		20-150%
	d3-MeFOSAA	99%		20-150%
	d5-EtFOSAA	97%		20-150%
	d7-MeFOSE	88%		20-150%
	d9-EtFOSE	90%		20-150%
	13C2-4:2FTS	121%		20-150%
	13C2-6:2FTS	110%		20-150%
	13C2-8:2FTS	112%		20-150%
	13C3-HFPO-DA	105%		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-HDMW225303-WGN01LF-2302W2		
Lab Sample ID:	FC2715-3	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	6Q14141.D	1	02/22/23 22:03	MV	02/16/23 09:00	OP95501	S6Q216
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	7.4 U	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-HDMW225303-WGN01LF-2302W2		
Lab Sample ID:	FC2715-3	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	3.7 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	113%		20-150%
	13C5-PFPeA	111%		20-150%
	13C5-PFHxA	114%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	107%		20-150%
	13C6-PFDA	104%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	91%		20-150%
	13C3-PFBS	113%		20-150%
	13C3-PFHxS	119%		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-HDMW225303-WGN01LF-2302W2		
Lab Sample ID:	FC2715-3	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	100%		20-150%
	13C8-FOSA	106%		20-150%
	d3-MeFOSA	102%		20-150%
	d5-EtFOSA	104%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	111%		20-150%
	d7-MeFOSE	101%		20-150%
	d9-EtFOSE	101%		20-150%
	13C2-4:2FTS	120%		20-150%
	13C2-6:2FTS	120%		20-150%
	13C2-8:2FTS	119%		20-150%
	13C3-HFPO-DA	108%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2302W2		
Lab Sample ID:	FC2715-4	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	6Q14142.D	1	02/22/23 22:17	MV	02/16/23 09:00	OP95501	S6Q216
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.4	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.7	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.7	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.7	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.7	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.7	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	1.9 U	4.7	1.9	0.94	ng/l	
4151-50-2	EtFOSA	1.9 U	4.7	1.9	0.94	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2302W2		
Lab Sample ID:	FC2715-4	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.4 U	47	9.4	4.1	ng/l	
1691-99-2	EtFOSE	19 U	47	19	7.0	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.94	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.4	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	9.4	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.4	3.8	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.4	1.9	0.74	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	24	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	119%		20-150%
	13C5-PFPeA	108%		20-150%
	13C5-PFHxA	107%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	112%		20-150%
	13C9-PFNA	113%		20-150%
	13C6-PFDA	118%		20-150%
	13C7-PFUnDA	101%		20-150%
	13C2-PFDoDA	97%		20-150%
	13C2-PFTeDA	86%		20-150%
	13C3-PFBS	113%		20-150%
	13C3-PFHxS	116%		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-RHMW16-WGN01LF-2302W2		
Lab Sample ID:	FC2715-4	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	102%		20-150%
	13C8-FOSA	112%		20-150%
	d3-MeFOSA	95%		20-150%
	d5-EtFOSA	93%		20-150%
	d3-MeFOSAA	110%		20-150%
	d5-EtFOSAA	105%		20-150%
	d7-MeFOSE	90%		20-150%
	d9-EtFOSE	93%		20-150%
	13C2-4:2FTS	130%		20-150%
	13C2-6:2FTS	124%		20-150%
	13C2-8:2FTS	122%		20-150%
	13C3-HFPO-DA	113%		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-RHMW10-WGN01LF-2302W2
Lab Sample ID: FC2715-5 **Date Sampled:** 02/14/23
Matrix: AQ - Ground Water **Date Received:** 02/15/23
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	6Q14144.D	1	02/22/23 22:45	MV	02/16/23 09:00	OP95501	S6Q216
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.4	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.7	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.7	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.7	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.7	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.7	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	1.9 U	4.7	1.9	0.94	ng/l	
4151-50-2	EtFOSA	1.9 U	4.7	1.9	0.94	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW10-WGN01LF-2302W2		
Lab Sample ID:	FC2715-5	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.4 U	47	9.4	4.1	ng/l	
1691-99-2	EtFOSE	19 U	47	19	7.0	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.94	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.4	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	9.4	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.4	3.8	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.4	1.9	0.74	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	24	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	112%		20-150%
	13C5-PFPeA	108%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	110%		20-150%
	13C6-PFDA	109%		20-150%
	13C7-PFUnDA	101%		20-150%
	13C2-PFDoDA	95%		20-150%
	13C2-PFTeDA	87%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	113%		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-RHMW10-WGN01LF-2302W2		
Lab Sample ID:	FC2715-5	**Date Sampled:**	02/14/23
Matrix:	AQ - Ground Water	**Date Received:**	02/15/23
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	105%		20-150%
	13C8-FOSA	107%		20-150%
	d3-MeFOSA	94%		20-150%
	d5-EtFOSA	96%		20-150%
	d3-MeFOSAA	106%		20-150%
	d5-EtFOSAA	97%		20-150%
	d7-MeFOSE	97%		20-150%
	d9-EtFOSE	94%		20-150%
	13C2-4:2FTS	120%		20-150%
	13C2-6:2FTS	123%		20-150%
	13C2-8:2FTS	113%		20-150%
	13C3-HFPO-DA	115%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

SGS North America Inc - Orlando
Chain of Custody

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

FC2715
SGS - ORLANDO JOB # :

COC #: 2302W2AFSG05
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: CHRIS WOMACK Sampler 2: NATE HOGSTEAD

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	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW12A-WGN01LF-2302W2	2/14/23	0945	NH	GW	3		X								X	
2	AF-RHMW12A-WGFD01LF-2302W2	2/14/23	0945	NH	GW	3		X								X	

INITIAL ASSESSMENT

LABEL VERIFICATION NH 2/14/23

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 516-8273 6382

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		2/14/23 1300	2 AECOM	3	2/14/23 1430	4
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		2/15/23 1430	6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.2°C IR

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

PFAS_COCs_ALL.xls Rev 031318

FC2715: Chain of Custody
Page 1 of 5

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

FC2715
SGS - ORLANDO JOB # :

COC #: 2302W2AFSG04
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: Andrew 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	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
3	AF-HDMW225303-WGN01LF-2302W2	2/14/23	1030	NT, AY	GW	3		X								X	

2/14/23

2/14/23

Turnaround Time (Business days)

- 10 Day (Business)
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Approved By: / Date:

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 016-82732382

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	Olivia Shirley AECOM	2/14/23 1550	2 AECOM	3 AECOM	2/14/23 1448	4
5	Relinquished by/Affiliation	Date Time: 2/15/23 1430	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

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

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

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FC2715: Chain of Custody
Page 2 of 5

SGS North America Inc - Orlando
Chain of Custody

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www.sgs.com

FC2715
SGS - ORLANDO JOB # :

COC #: 2302W2AFSG06
PAGE 1 OF 1

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:** **Sampler 2:**	**Client Purchase Order #**		

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH-ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
4	AF-RHMW16-WGN01LF-2302W2	2/14/23	1155	NH	GW	3		X								X	

NH 2/14/23

NH

2/14/23

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 016-82736382

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	2/14/23 1310	2 AECOM	3 AECOM	2/14/23 1430	4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation**	**Relinquished By/Affiliation**	**Date Time:**	**Received By/Affiliation**
5	2/15/23 1430	6	7		8

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

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

PFAS_COCs_ALL.xls Rev 031318

FC2715: Chain of Custody
Page 3 of 5

SGS North America Inc - Orlando
Chain of Custody

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www.sgs.com

FC2715
SGS - ORLANDO JOB # :

COC #: 2302W2AFSG03
PAGE 1 OF 1

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:** Mason Turner **Sampler 2:** Andrew Young	**Client Purchase Order #**		

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
5	AF-RHMW10-WGN01LF-2302W2	2/14/23	1240	NT, AY	GW	3		X								X	

2/14/23

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 016-82736382

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 Olivia Shirley / AECOM	2/14/23 1355	2 AECOM	3 AECOM	2/14/23 1440	4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation**	**Relinquished By/Affiliation**	**Date Time:**	**Received By/Affiliation**
5	2/15/23 0930	6	7		8

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

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

PFAS_COCs_ALL.xls Rev 031318

FC2715: Chain of Custody
Page 4 of 5

SGS Sample Receipt Summary

Job Number: FC2715 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/15/2023 2:30:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-82736382

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

Cooler Temps (Raw Measured) °C: Cooler 1: (1.2);

Cooler Temps (Corrected) °C: Cooler 1: (1.4);

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: CARLOSD Date: 2/15/2023 2:30:00 PM Reviewer: CD Date: 2/17/2023

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2715
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/14/23

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 FC2715

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: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q216-IBLK	6Q14130.D	1	02/22/23	MV	n/a	n/a	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

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	0.0028	0.0050	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0037	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	0.0289	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0316	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: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q216-IBLK	6Q14130.D	1	02/22/23	MV	n/a	n/a	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

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	102%	20-150%
	13C5-PFHxA	103%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	97%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	97%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	92%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	103%	20-150%
	13C3-PFHxS	97%	20-150%
	13C8-PFOS	108%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSA	99%	20-150%
	d5-EtFOSA	104%	20-150%
	d3-MeFOSAA	109%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	103%	20-150%
	d9-EtFOSE	99%	20-150%
	13C2-4:2FTS	108%	20-150%
	13C2-6:2FTS	112%	20-150%
	13C2-8:2FTS	99%	20-150%
	13C3-HFPO-DA	100%	20-150%

Method Blank Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-MB	6Q14137.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

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: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-MB	6Q14137.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

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	115%	20-150%
	13C5-PFPeA	112%	20-150%
	13C5-PFHxA	115%	20-150%
	13C4-PFHpA	109%	20-150%
	13C8-PFOA	113%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	111%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	84%	20-150%
	13C3-PFBS	118%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	105%	20-150%
	13C8-FOSA	101%	20-150%
	d3-MeFOSA	87%	20-150%
	d5-EtFOSA	94%	20-150%
	d3-MeFOSAA	109%	20-150%
	d5-EtFOSAA	104%	20-150%
	d7-MeFOSE	88%	20-150%
	d9-EtFOSE	88%	20-150%
	13C2-4:2FTS	138%	20-150%
	13C2-6:2FTS	141%	20-150%
	13C2-8:2FTS	132%	20-150%
	13C3-HFPO-DA	113%	20-150%

Blank Spike Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-LLBS	6Q14136.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0450	113	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0237	119	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0109	109	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0113	113	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0111	111	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0123	123	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0107	107	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0110	110	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0103	103	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0107	107	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0122	122	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0107	121	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.010	106	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0097	106	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0104	109	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0113	122	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0112	116	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0106	110	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0103	106	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0418	111	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0410	108	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0430	112	40-150
754-91-6	PFOSA	0.01	0.0117	117	40-150
31506-32-8	MeFOSA	0.01	0.0100	100	40-150
4151-50-2	EtFOSA	0.01	0.0097	97	40-150
2355-31-9	MeFOSAA	0.01	0.0108	108	40-150
2991-50-6	EtFOSAA	0.01	0.0106	106	40-150
24448-09-7	MeFOSE	0.1	0.113	113	40-150
1691-99-2	EtFOSE	0.1	0.110	110	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0476	119	40-150
919005-14-4	ADONA	0.0378	0.0446	118	40-150
377-73-1	PFMPA	0.02	0.0228	114	40-150
863090-89-5	PFMBA	0.02	0.0227	114	40-150
151772-58-6	NFDHA	0.02	0.0249	125	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0420	112	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0413	109	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-LLBS	6Q14136.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0211	119	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0513	103	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.284	114	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.286	114	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	118%	20-150%
	13C5-PFPeA	116%	20-150%
	13C5-PFHxA	120%	20-150%
	13C4-PFHpA	121%	20-150%
	13C8-PFOA	116%	20-150%
	13C9-PFNA	123%	20-150%
	13C6-PFDA	126%	20-150%
	13C7-PFUnDA	113%	20-150%
	13C2-PFDoDA	116%	20-150%
	13C2-PFTeDA	105%	20-150%
	13C3-PFBS	105%	20-150%
	13C3-PFHxS	112%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	110%	20-150%
	d3-MeFOSA	104%	20-150%
	d5-EtFOSA	105%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	112%	20-150%
	d7-MeFOSE	99%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	125%	20-150%
	13C2-6:2FTS	128%	20-150%
	13C2-8:2FTS	118%	20-150%
	13C3-HFPO-DA	117%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-BS	6Q14135.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.120	120	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0609	122	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0308	123	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0284	114	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0302	121	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0293	117	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0298	119	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0292	117	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0264	106	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0290	116	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0316	126	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0285	129	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0293	125	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0293	128	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0284	119	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0270	116	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0286	119	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0300	124	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0283	117	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.105	112	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.117	123	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.126	131	40-150
754-91-6	PFOSA	0.025	0.0290	116	40-150
31506-32-8	MeFOSA	0.025	0.0262	105	40-150
4151-50-2	EtFOSA	0.025	0.0286	114	40-150
2355-31-9	MeFOSAA	0.025	0.0289	116	40-150
2991-50-6	EtFOSAA	0.025	0.0303	121	40-150
24448-09-7	MeFOSE	0.25	0.290	116	40-150
1691-99-2	EtFOSE	0.25	0.262	105	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.114	114	40-150
919005-14-4	ADONA	0.0945	0.110	116	40-150
377-73-1	PFMPA	0.05	0.0586	117	40-150
863090-89-5	PFMBA	0.05	0.0605	121	40-150
151772-58-6	NFDHA	0.05	0.0680	136	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.105	112	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.112	119	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-BS	6Q14135.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0546	123	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.139	111	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.750	120	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.786	126	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	109%	20-150%
	13C5-PFPeA	110%	20-150%
	13C5-PFHxA	107%	20-150%
	13C4-PFHpA	113%	20-150%
	13C8-PFOA	106%	20-150%
	13C9-PFNA	114%	20-150%
	13C6-PFDA	111%	20-150%
	13C7-PFUnDA	107%	20-150%
	13C2-PFDoDA	109%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	104%	20-150%
	13C8-PFOS	103%	20-150%
	13C8-FOSA	108%	20-150%
	d3-MeFOSA	107%	20-150%
	d5-EtFOSA	100%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	99%	20-150%
	d9-EtFOSE	107%	20-150%
	13C2-4:2FTS	120%	20-150%
	13C2-6:2FTS	111%	20-150%
	13C2-8:2FTS	109%	20-150%
	13C3-HFPO-DA	114%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-MS	6Q14139.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216
FC2715-1	6Q14138.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	FC2715-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.019	U	0.0943	0.114	121	40-150
2706-90-3	Perfluoropentanoic acid	0.0053	J	0.0472	0.0620	120	40-150
307-24-4	Perfluorohexanoic acid	0.0014	J	0.0236	0.0279	112	40-150
375-85-9	Perfluoroheptanoic acid	0.0046	U	0.0236	0.0321	136	40-150
335-67-1	Perfluorooctanoic acid	0.0046	U	0.0236	0.0289	123	40-150
375-95-1	Perfluorononanoic acid	0.0046	U	0.0236	0.0286	121	40-150
335-76-2	Perfluorodecanoic acid	0.0046	U	0.0236	0.0280	119	40-150
2058-94-8	Perfluoroundecanoic acid	0.0046	U	0.0236	0.0275	117	40-150
307-55-1	Perfluorododecanoic acid	0.0046	U	0.0236	0.0260	110	40-150
72629-94-8	Perfluorotridecanoic acid	0.0046	U	0.0236	0.0272	115	40-150
376-06-7	Perfluorotetradecanoic acid	0.0046	U	0.0236	0.0289	123	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0046	U	0.0209	0.0256	122	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046	U	0.0222	0.0249	112	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0046	U	0.0216	0.0257	119	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0046	U	0.0225	0.0296	132	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0046	U	0.0219	0.0283	129	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0046	U	0.0227	0.0262	115	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0046	U	0.0228	0.0227	100	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046	U	0.0229	0.0237	104	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.019	U	0.0884	0.105	119	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019	U	0.0896	0.106	118	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019	U	0.0906	0.116	128	40-150
754-91-6	PFOSA	0.0046	U	0.0236	0.0295	125	40-150
31506-32-8	MeFOSA	0.0046	U	0.0236	0.0258	109	40-150
4151-50-2	EtFOSA	0.0046	U	0.0236	0.0269	114	40-150
2355-31-9	MeFOSAA	0.0046	U	0.0236	0.0276	117	40-150
2991-50-6	EtFOSAA	0.0046	U	0.0236	0.0286	121	40-150
24448-09-7	MeFOSE	0.046	U	0.236	0.272	115	40-150
1691-99-2	EtFOSE	0.046	U	0.236	0.268	114	40-150
13252-13-6	HFPO-DA (GenX)	0.019	U	0.0943	0.110	117	40-150
919005-14-4	ADONA	0.019	U	0.0892	0.108	121	40-150
377-73-1	PFMPA	0.0093	U	0.0472	0.0566	120	40-150
863090-89-5	PFMBA	0.0093	U	0.0472	0.0565	120	40-150
151772-58-6	NFDHA	0.0093	U	0.0472	0.0605	128	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.019	U	0.0882	0.102	116	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.019	U	0.0892	0.0838	94	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-MS	6Q14139.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216
FC2715-1	6Q14138.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	FC2715-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0093	U	0.042	0.0528	126	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.023	U	0.118	0.131	111	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.12	U	0.59	0.746	127	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.12	U	0.59	0.669	113	40-150

CAS No.	ID Standard Recoveries	MS	FC2715-1	Limits
	13C4-PFBA	109%	116%	20-150%
	13C5-PFPeA	110%	110%	20-150%
	13C5-PFHxA	108%	112%	20-150%
	13C4-PFHpA	101%	110%	20-150%
	13C8-PFOA	97%	112%	20-150%
	13C9-PFNA	110%	112%	20-150%
	13C6-PFDA	104%	107%	20-150%
	13C7-PFUnDA	91%	95%	20-150%
	13C2-PFDoDA	79%	87%	20-150%
	13C2-PFTeDA	71%	79%	20-150%
	13C3-PFBS	112%	113%	20-150%
	13C3-PFHxS	117%	117%	20-150%
	13C8-PFOS	95%	101%	20-150%
	13C8-FOSA	109%	109%	20-150%
	d3-MeFOSA	99%	106%	20-150%
	d5-EtFOSA	90%	95%	20-150%
	d3-MeFOSAA	103%	95%	20-150%
	d5-EtFOSAA	95%	96%	20-150%
	d7-MeFOSE	87%	98%	20-150%
	d9-EtFOSE	88%	100%	20-150%
	13C2-4:2FTS	121%	146%	20-150%
	13C2-6:2FTS	123%	125%	20-150%
	13C2-8:2FTS	108%	118%	20-150%
	13C3-HFPO-DA	111%	116%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-DUP	6Q14143.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216
FC2715-4	6Q14142.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	FC2715-4 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	0.0094 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0047 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0047 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0047 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0047 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0047 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0047 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0047 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0047 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0047 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0047 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0047 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0047 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0047 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0047 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0047 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0047 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0047 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
754-91-6	PFOSA	0.0047 U		ND		nc	30
31506-32-8	MeFOSA	0.0047 U		ND		nc	30
4151-50-2	EtFOSA	0.0047 U		ND		nc	30
2355-31-9	MeFOSAA	0.0047 U		ND		nc	30
2991-50-6	EtFOSAA	0.0047 U		ND		nc	30
24448-09-7	MeFOSE	0.047 U		ND		nc	30
1691-99-2	EtFOSE	0.047 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	0.0094 U		ND		nc	30
863090-89-5	PFMBA	0.0094 U		ND		nc	30
151772-58-6	NFDHA	0.0094 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: FC2715
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95501-DUP	6Q14143.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216
FC2715-4	6Q14142.D	1	02/22/23	MV	02/16/23	OP95501	S6Q216

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

FC2715-1, FC2715-2, FC2715-3, FC2715-4, FC2715-5

CAS No.	Compound	FC2715-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0094	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.024	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	FC2715-4	Limits
	13C4-PFBA	114%	119%	20-150%
	13C5-PFPeA	118%	108%	20-150%
	13C5-PFHxA	121%	107%	20-150%
	13C4-PFHpA	120%	107%	20-150%
	13C8-PFOA	108%	112%	20-150%
	13C9-PFNA	111%	113%	20-150%
	13C6-PFDA	116%	118%	20-150%
	13C7-PFUnDA	110%	101%	20-150%
	13C2-PFDoDA	98%	97%	20-150%
	13C2-PFTeDA	98%	86%	20-150%
	13C3-PFBS	112%	113%	20-150%
	13C3-PFHxS	111%	116%	20-150%
	13C8-PFOS	104%	102%	20-150%
	13C8-FOSA	116%	112%	20-150%
	d3-MeFOSA	103%	95%	20-150%
	d5-EtFOSA	104%	93%	20-150%
	d3-MeFOSAA	119%	110%	20-150%
	d5-EtFOSAA	107%	105%	20-150%
	d7-MeFOSE	106%	90%	20-150%
	d9-EtFOSE	109%	93%	20-150%
	13C2-4:2FTS	120%	130%	20-150%
	13C2-6:2FTS	117%	124%	20-150%
	13C2-8:2FTS	120%	122%	20-150%
	13C3-HFPO-DA	120%	113%	20-150%

* = Outside of Control Limits.