

# SUSTAINABLE ENVIRONMENT, ENERGY, HEALTH & SAFETY PROFESSIONAL SERVICES

NORTECH, Inc.

April 22, 2019

**Accounting Office:** 2400 College Rd **Fairbanks**, AK 99709 907.452.5688 907.452.5694 Fax



RE: Spring 2019 - PFAS Groundwater Results

3105 Lakeshore Drive Suite A106 **Anchorage**, AK 99517 907.222.2445 907.222.0915 Fax

Thank you very much for participating in **NORTECH**'s well search and initial groundwater assessment. Enclosed is the laboratory report for your well. The laboratory results of your groundwater sample are non-detect for the two compounds of concern. There is no action you need to take at this time.

5438 Shaune Drive Suite B **Juneau**, AK 99801 907.586.6813 907.586.6819 Fax Please reference Section 4 - "Report of Analysis" found on Page 13 of this report for the results of your groundwater related to per- and poly-fluoroalkyl substances (PFAS). PFAS compounds Perfluorooctanesulfonic acid (PFOS) and Perfluorooctonoic Acid (PFOA) were not detected in your water well sample.

www.nortechengr.com

The Environmental Protection Agency (EPA) and Alaska Department of Environmental Conservation (ADEC) have set an updated Lifetime Health Advisory (LHA) level of 0.070 micrograms per liter ( $\mu$ g/L). The LHA of 0.070  $\mu$ g/L is for the sum of PFAS compounds PFOS and PFOA in drinking water.

As required by ADEC, we will be notifying ADEC of your laboratory test results. If you have any additional questions regarding the results of this report, please feel free to contact me or Julie Keener, at the **NORTECH** office, 907-452-5688, Monday through Friday, 8 am to 5 pm.

Again, thank you for participating in this groundwater assessment and we hope that you have a good summer.

Sincerely, **NORTECH** 

Scott Hummel Chemist

to W. Hummel

Attached: SGS Work Order Laboratory Report: 1199072



### **Laboratory Report of Analysis**

To: Nortech

> 2450 College Road Fairbanks, AK 99709 (907)452-5688

Report Number: 1199072

Client Project: PFC Well Scarch NAPA-Van Horn

Dear Scott Hummel,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,

SGS North America Inc.

Stephen Ede 2019.03.19

13:48:07 -08'00'

Jennifer Dawkins

Date

Project Manager

Jennifer.Dawkins@sgs.com

Print Date: 03/19/2019 11:53:42AM

Results via Engage



### **Case Narrative**

SGS Client: Nortech SGS Project: 1199072

Project Name/Site: PFC Well Scarch NAPA-Van Horn

Project Contact: Scott Hummel

Refer to sample receipt form for information on sample condition.

-01 (1199072001) PS

EPA 537- QSM 5.1 24 Compound List was analyzed by SGS of Orlando, FL.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 03/19/2019 11:53:43AM

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com



**Sample Summary** 

Client Sample ID Lab Sample ID Collected Received Matrix

-01 1199072001 02/25/2019 03/01/2019 Water (Surface, Eff., Ground)

Method Description



### SGS North America Inc. CHAIN OF CUSTODY RECORD



### **Locations Nationwide**

Alaska Maryland New Jersey New York North Carolina Indiana West Virgina Kentucky

www.us.sgs.com

Section 1	CLIENT: NORTECH			Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.						000	Page of						
	Scott Hummel PHONE NO: CONTACT: 907-452-5688			Section 3			Preservative						rage 7_ or 7_				
	NAME: NAPA-Van Horn PERMITH: 17-1001				# C O		None										
	REPORTS TO: E-MAIL:  Scott Humanal Scott, hammal@ noureclange, com INVOICE TO: QUOTE #:			N T A	Type C = COMP G = GRAB	.37											
	Nor	RTECH P.O	.#: /7	-1001		N	Multi	20									
	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	E R S	Incre- mental Solls	PFCS									REMARKS/ LOC ID
	Q4-B		02/25/19	1735	WATER	Z	G	X					10				
Section 2																_	
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			-														
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	Baltimostaka	4 10 40	D-4-	Trian -	Baseland Bu		3-3	Dela	Sec	ion 4	DOD	Project	t? Yes	s No	Data	Deliver	able Requirements:
И	Relinquished	A D	Date	Time Received By:		By: 2-28-19		-7-2	- Cocker   C			Series a tributor of No. Mor. com.					
			(\$30)	Received By:			Cooler ID:  Requested Turnaround Time and/or Special Instructions				uctions	•					
Section 5			- 4047,5	Received by:			Standard TAT  Run Same 115T as 2018 1189850										
Sec	Relinquished	By: (3)	Date	Time	Received By	:						of Silver	-	Zo		UCAS SA	
							Temp	Temp Blank °C: 2.3°C			Chai	n of Cu	stody Seal: (Circle)				
	Relinquished By: (4)  Date Time Received For 3/1/19 1010 LULU				-	cons			or Am	bient [ ]	1	orm)	Acres 1		ROKEN ARSENT Sample Receipt Form)		

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

AAC: 3.6 756http://www.sgs.com/terms-and-conditions





## FAIRBANKS SAMPLE RECEIPT FORM

Note: This form is to be completed by Fairbanks Receiving Staff for all samples

Review Criteria:	C	onditio		Comments/Actions Taken
Were custody seals intact? Note # & location, if applicable.	Yes	No	(VA)	Exemption permitted if sampler hand
COC accompanied samples?	(es_	No	N/A	carries/delivers.
Temperature blank compliant* (i.e., 0-6°C)	Xes.	No		□Exemption permitted if chilled &
lf>6°C, were samples collected <8 hours ago?	Yes	No	M/A	collected <8hrs ago
If <0°C, were all sample containers ice free?	Yes	No	N/A	
Cooler ID: @ 23°C w/Therm. ID: 1)97				
Cooler ID: @ w/Therm. ID:				
Cooler ID: @ w/Therm. ID:				
Cooler ID: @ w/Therm. ID:				
Cooler ID: @ w/Therm. ID:  If samples are received without a temperature blank, the "cooler temperature" will be				
documented in lieu of the temperature blank and "COOLER TEMP" will be noted to				Note: Identify containers received at
the right. In cases where neither a temp blank nor cooler temp can be obtained, note				non-compliant temperature. Use form
ambient ( ) or chilled ( ). Please check one.				FS-0029 if more space is needed.
Delivery Method: Client (hand carried) Other:	Tra	cking/A	∆B#:	
	Or	see atta		
	<u></u>	Or W	A	
For samples received with payment, note amount (\$ ) and wh	ether casl	h / chec	k / CC (ci	rcle one) was received.
Were samples in good condition (no leaks/cracks/breakage)?	Yes	No	N/A	Note: some samples are sent to
Packing material used (specify all that apply): Bubble Wrap				Anchorage without inspection by SGS Fairbanks personnel.
Separate plastic bags Vermiculite Other:				r arounds personnel,
Was The Was he fire MOAs IX IX ) and a side on land	V		¥264	<del> </del>
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	_ <u>N</u> o_	N/A	<del></del>
For RUSH/SHORT Hold Time, were COC/Bottles flagged	Yes	No	N/A	
accordingly? Was Rush/Short HT email sent, if applicable?	Yes	No	M/A	
Additional notes (if applicable):				<del></del>
Profile #: 362417				
The same of the sa				
Note to City of a supplied to the first fi		daniel .		
Note to Client: any "no" circled above indicates non-compliance	e with stan	dard proc	edures and	may impact data quality.



e-Sample Receipt Form

SGS Workorder #:

1199072



condition (Yes, No, N/A Exceptions Noted b	
/ Temperature Requirements N/A Exemption permitted if sampler ha	nd carries/delivers
ody Seals intact? Note # & location Yes 1-F, 1-B	
COC accompanied samples? Yes	
**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is	
	°C Therm. ID: D5
Cooler ID: @	°C Therm. ID:
mpliant* (i.e., 0-6 °C after CF)? Cooler ID:	°C Therm. ID:
Cooler ID: @	°C Therm. ID:
Cooler ID: @	°C Therm. ID:
nples collected <8 hours ago? N/A	
re sample containers ice free? N/A	
temperature blank, the "cooler cooler	
lieu of the temperature blank & right. In cases where neither a	
be obtained, note "ambient" or	
"chilled".	
at non-compliant temperature0029 if more space is needed.	
· · · · · · · · · · · · · · · · · · ·	
on / Sample Condition Requirements Note: Refer to form F-083 "Sample Guide" for spe	ecific holding times
es received within holding time? Yes	
ple IDs,dates/times collected)? Yes	
record details & login per COC.	
s? (i.e., method is specified for Yes	
rses with >1 option for analysis)	
N/A ***Exemption permitted for metals	(e.g. 200.8/6020A)
s/volume/preservative***)used? Yes	(0.9,200.0/0020/1)
Volatile / LL-Hg Requirements	
LL-Hg) in cooler with samples? N/A	
adspace (i.e., bubbles ≤ 6mm)? N/A	
eld extracted with MeOH+BFB? N/A	
answer above indicates non-compliance with standard procedures and may impact data qu	lality.
Additional notes (if applicable):	
· · · ·	



### **Sample Containers and Preservatives**

Container Id	<u>Preservative</u>	<u>Container</u>	Container Id	<u>Preservative</u>	<u>Container</u>
		<u>Condition</u>			<u>Condition</u>
1199072001-A	No Preservative Required	OK			
1199072001-B	No Preservative Required	OK			

### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

- OK The container was received at an acceptable pH for the analysis requested.
- BU The container was received with headspace greater than 6mm.
- DM The container was received damaged.
- FR The container was received frozen and not usable for Bacteria or BOD analyses.
- IC The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
- PA The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
- PH The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.



Orlando, FL

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

e-Hardcopy 2.0
Automated Report

03/19/19



SGS North America, Inc 1199072

SGS Job Number: FA62041

Sampling Date: 02/25/19



andrea.colby@sgs.com

Total number of pages in report: 22



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.

General Manager

Caitlin Brice, M.S.

Client Service contact: Andrea Colby 407-425-6700

 $\label{eq:certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) \\ DoD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DoD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T1047040404), PA(68-03573), VA(460177), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T1047040404), PA(48-03573), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), TX(T1047040404), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(2937), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(293704), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(293704), \\ DOD\ ELAP(ANAB\ L2229), AZ(AZ0806), CA(293704), \\ DOD\ ELAP(ANAB\ L2229), \\ DOD\$ 

AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

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Test results relate only to samples analyzed.

SGS North America Inc. • 4405 Vineland Road • Suite C-15 • Orlando, FL 32811 • tel: 407-425-6700 • Faxie 4870 + 2590707

## Sections:

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SGS North America Inc.



## Sample Summary

SGS North America, Inc

**Job No:** FA62041 1199072

Sample Number	Collected	Matrix	Client
Number	Date Time By	Received Code Type	Sample ID
FA62041-1	02/25/19 17:35 JS	03/05/19 AQ Water	-01

# 2

### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc Job No FA62041

Site: 1199072 Report Date 3/11/2019 11:34:22

1 Sample was collected on 02/25/2019 and received at SGS North America Inc - Orlando on 03/05/2019 properly preserved, at 3.6 Deg. C and intact. This sample received an SGS Orlando job number of FA62041. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### MS Semi-volatiles By Method EPA 537M BY ID

Matrix: AO Batch ID: OP74055

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) FA62041-1MS, FA62042-1DUP were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

Sample(s) FA62041-1 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.

Blank Spike Recovery(s) for Perfluorodecanesulfonic acid are outside control limits.

OP74055-BS for Perfluorodecanesulfunic acid: Sporadic marginal failure.

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

RPD(s) for Duplicate for Perfluorooctanoic acid are outside control limits for sample OP74055-DUP. Probable cause is due to sample non-homogeneity.

FA62041-1: Insufficient sample for re-extraction.

FA62041-1 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:		
Ariel Hartney, Client Services	(Signature on	File)

Page 1 of 1

20

**Summary of Hits Job Number:** FA62041

Account: SGS North America, Inc

**Project:** 1199072 **Collected:** 02/25/19

Lab Sample ID Client Sample ID	Result/				
Analyte	Qual	RL	MDL	Units	Method

FA62041-1 -01

No hits reported in this sample.



## Orlando, FL

## Section 4

Sample Results
Report of Analysis

## 2

### ige 1 01 2

Client Sample ID: -01

Lab Sample ID:FA62041-1Date Sampled:02/25/19Matrix:AQ - WaterDate Received:03/05/19Method:EPA 537M BY ID EPA 537 MODPercent Solids:n/a

**Project:** 1199072

 File ID
 DF
 Analyzed
 By
 Prep Date
 Prep Batch
 Analytical Batch

 Run #1 a
 3Q1687.D
 1
 03/07/19 23:49
 NAF
 03/06/19 09:30
 OP74055
 S3Q46

 Run #2
 S3Q46
 S3Q46
 S3Q46
 S3Q46
 S3Q46
 S3Q46

**Report of Analysis** 

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

### **PFAS List**

CAS No.	Compound	Result	RL	Units	Q				
PERFLUOF	ROALKYLCARBOXYLIC AC	IDS							
375-22-4	Perfluorobutanoic acid	ND	0.0077	ug/l	В				
2706-90-3	Perfluoropentanoic acid	ND	0.0038	ug/l					
307-24-4	Perfluorohexanoic acid	ND	0.0038	ug/l					
375-85-9	Perfluoroheptanoic acid	ND	0.0038	ug/l					
335-67-1	Perfluorooctanoic acid	ND	0.0038	ug/l					
375-95-1	Perfluorononanoic acid	ND	0.0038	ug/l					
335-76-2	Perfluorodecanoic acid	ND	0.0038	ug/l					
2058-94-8	Perfluoroundecanoic acid	ND	0.0038	ug/l					
307-55-1	Perfluorododecanoic acid	ND	0.0038	ug/l					
72629-94-8	Perfluorotridecanoic acid	ND	0.0038	ug/l					
376-06-7	Perfluorotetradecanoic acid	ND	0.0038	ug/l					
	ROALKYLSULFONATES								
375-73-5	Perfluorobutanesulfonic acid	ND	0.0038	ug/l					
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0038	ug/l					
355-46-4	Perfluorohexanesulfonic acid	ND	0.0038	ug/l					
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0038	ug/l					
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0038	ug/l					
68259-12-1	Perfluorononanesulfonic acid	ND	0.0038	ug/l					
335-77-3	Perfluorodecanesulfonic acid <sup>b</sup>	ND	0.0038	ug/l					
PERFLUOR	ROOCTANESULFONAMIDES	S							
754-91-6	PFOSA	ND	0.0038	ug/l					
				Č					
PERFLUOF	ROOCTANESULFONAMIDO	ACETIC AC	CIDS						
2355-31-9	MeFOSAA	ND	0.019	ug/l					
2991-50-6	EtFOSAA	ND	0.019	ug/l					
FLUOROTELOMER SULFONATES									
	6:2 Fluorotelomer sulfonate	ND	0.0077	ug/l ug/l					
2/017-7/-2	0.2 Fluorotetomer sumonate	עא	0.0077	ug/I					

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## **Report of Analysis**



Lab Sample ID:FA62041-1Date Sampled:02/25/19Matrix:AQ - WaterDate Received:03/05/19Method:EPA 537M BY IDEPA 537 MODPercent Solids:n/a

**Project:** 1199072

### **PFAS List**

CAS No.	Compound	Result	RL	Units Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0077	ug/l
CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	86%		30-140%
	13C5-PFPeA	92%		40-140%
	13C5-PFHxA	100%		50-150%
	13C4-PFHpA	105%		50-150%
	13C8-PFOA	120%		50-150%
	13C9-PFNA	117%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	93%		50-150%
	13C2-PFDoDA	84%		50-150%
	13C2-PFTeDA	87%		40-150%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	82%		50-150%
	13C8-FOSA	89%		30-140%
	d3-MeFOSAA	100%		50-150%
	13C2-4:2FTS	103%		50-150%
	13C2-6:2FTS	128%		50-150%
	13C2-8:2FTS	108%		50-150%

- (a) Insufficient sample for re-extraction.
- (b) Associated BS recovery outside control limits.

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound





## Orlando, FL

**Section 5** 

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody



### SGS North America Inc. CHAIN OF CUSTODY RECORD



Flonda

				i.					1 1 9	9 0	7 2		Texas	North Carolina								
		A62	NU										Virginia	Louislana								
	4	TOL											www.us.s	os.com								
CLIENT		nerica Inc Alas			-	Refere					SGS,											
CONTACT:	Julia Shumway	PHONE NO:	(907) 5	162-2343	Addit		omments	: All s	soils repo	ort ou	t in dry	weight unles	s otherwise	Page (of*								
PROJECT	1199072	PWSID#:				Preserv-																
NAME:	11990/2			C	Used:	A STATE		1														
REPORTS TO	D:	E-MAIL:	Julie, Shumv	vay ଲି sqs.com																		
NVOICE TO:	SGS - Alaska	QUOTE #: P.O. #:	119	9072	N - N		I GRAB N Moib	I GRAD N Mult	N MIND	I GRAB N Mulb	I DRAB N Mulb	I GRAB		N Mail								
HESERVED	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME	MATRIX/	R	muntal Solar	PA S			MS	MSD	SGS lab #	Le	cation ID								
TOT GRO USE		2/25/2019	17:35	Water	2	G=	X	100	4		1	1199072001										
Relingatehed	1 By: (1)	Date 3/4/2019	Time	Received 6	ey: IRS		1	Co	Report to		Project? Flags)?			ola Requirements:								
Rollinguished	UPS	Date	Time	Received I	4100			Re	equested T	umaro	und Tim	ne and or Special	Instructions:									
Relinquished		Date	Time	Received f	Ву:			F	Report all	analy:	ses for	Soils/Waters In	n mg/L or mg/l	(g, where possibl								
				1	1	1		-	mp Blank	'C: _	3	-6	Chain of Cu	entady Scal: (Circle)								
Relinquished	i Βγ; (4)	Date	Time	Received I	-/	1	* 131: 3/05/19			01 4	Amblent	[1]	INTACT E	IROKEN ABSENT								

| X | 200 W. Potter Drive Anchorage, AX 99518 Tel: (907) 562-2343 Fax: (907) 551-5301

| | 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sqs.com/terms and conditions.htm

1199072\_PFC\_03,04.19 als

FA62041: Chain of Custody Page 1 of 2

## 5

## **G**T

## **SGS Sample Receipt Summary**

Job Number: FA62041	Client:	SGS	Project: 1199072				
Date / Time Received: 3/5/2019 1:15:00 PM		Delivery Method: UPS	Airbill #'s: 1za8619v	Airbill #'s: 1za8619w0166092034			
Therm ID: IR 1;		Therm CF: -0.2;	# of Coole	rs: 1			
Cooler Temps (Raw Measured) °C: Co	ooler 1: (3.8	);					
Cooler Temps (Corrected) °C: C	ooler 1: (3.6	);					
Cooler Information Y o	r N	Sample Informa	tion	<u>Y 0</u>	_N_	N/A	
Custody Seals Present		1. Sample labels	present on bottles				
2. Custody Seals Intact		2. Samples prese	rved properly	V			
3. Temp criteria achieved		3. Sufficient volun	ne/containers recvd for analysis:				
4. Cooler temp verification IR Gun		4. Condition of sa	mple	Intact			
5. Cooler media <u>Ice (Ba</u>	g)	5. Sample recvd v	vithin HT	•			
		6. Dates/Times/ID	s on COC match Sample Label	<b>9</b>			
rip Blank Information Y o	<u>r N</u> _	N/A 7. VOCs have hea	adspace			<b>M</b>	
1. Trip Blank present / cooler		8. Bottles received	d for unspecified tests			-	
2. Trip Blank listed on COC		9. Compositing in	structions clear			•	
w	or S	N/A 10. Voa Soil Kits/s	Jars received past 48hrs?				
450		11. % Solids Jar r	eceived?		1		
3. Type Of TB Received		12. Residual Chlo	rine Present?			•	
Misc. Information							
Number of Encores: 25-Gram	5-Gram	Number of 5035 Field Kits	: Number of L	ab Filtered	Metals: _		
Test Strip Lot #s: pH 0-3	23031	5 pH 10-12 21981	3A Other: (Spe	cify)		_	
Residual Chlorine Test Strip Lot #:							
Comments							
SM001 Taskering OHAM							
Rev. Date 05/24/17 Technician: SHAYL	AP	Date: 3/5/2019 1:15:00 PM	Reviewer:		Date:		

FA67041: Chain of Custody Page 2 of 2



## Orlando, FL

Section 6

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method: EPA 537M BY ID

## **Method Blank Summary**

**Job Number:** FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	<b>Prep Date</b>	Prep Batch	Analytical Batch
OP74055-MB	3Q1686.D	1	03/07/19	NAF	03/06/19	OP74055	S3Q46

The QC reported here applies to the following samples:

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	0.00464	0.0080	ug/l	J
2706-90-3	Perfluoropentanoic acid	ND	0.0040	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	ug/1	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	ug/1	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	ug/1	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	ug/1	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	ug/1	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	ug/1	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	ug/l	
754-91-6	PFOSA	ND	0.0040	ug/l	
2355-31-9	MeFOSAA	ND	0.020	ug/1	
2991-50-6	EtFOSAA	ND	0.020	ug/l	
757124-72-	44:2 Fluorotelomer sulfonate	ND	0.0080	ug/1	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	ug/1	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	ug/l	

CAS No.	<b>ID Standard Recoveries</b>		Limits
	13C4-PFBA	89%	30-140%
	13C5-PFPeA	91%	40-140%
	13C5-PFHxA	100%	50-150%
	13C4-PFHpA	103%	50-150%
	13C8-PFOA	117%	50-150%
	13C9-PFNA	115%	50-150%
	13C6-PFDA	90%	50-150%
	13C7-PFUnDA	77%	50-150%

# Method Blank Summary Job Number: FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	<b>Prep Date</b>	<b>Prep Batch</b>	<b>Analytical Batch</b>
OP74055-MB	3Q1686.D	1	03/07/19	NAF	03/06/19	OP74055	S3Q46

The QC reported here applies to the following samples: Method: EPA 537M BY ID

CAS No.	<b>ID Standard Recoveries</b>		Limits		
	13C2-PFDoDA	65%	50-150%		
	13C2-PFTeDA	65%	40-150%		
	13C3-PFBS	90%	50-150%		
	13C3-PFHxS	88%	50-150%		
	13C8-PFOS	62%	50-150%		
	13C8-FOSA	84%	30-140%		
	d3-MeFOSAA	88%	50-150%		
	13C2-4:2FTS	99%	50-150%		
	13C2-6:2FTS	124%	50-150%		
	13C2-8:2FTS	102%	50-150%		

Method: EPA 537M QSM5.1 B-15

## **Instrument Blank**

Job Number: FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q46-IBLK	3Q1641.D	1	03/07/19	NAF	n/a	n/a	S3Q46

The QC reported here applies to the following samples:

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	ug/1	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	ug/1	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	ug/1	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	ug/1	
754-91-6	PFOSA	ND	0.0080	ug/l	
2355-31-9	MeFOSAA	ND	0.040	ug/l	
2991-50-6	EtFOSAA	ND	0.040	ug/l	
757124-72-	44:2 Fluorotelomer sulfonate	ND	0.016	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	ug/l	

CAS No.	<b>ID Standard Recoveries</b>		Limits
	13C4-PFBA	96%	50-150%
	13C5-PFPeA	96%	50-150%
	13C5-PFHxA	104%	50-150%
	13C4-PFHpA	107%	50-150%
	13C8-PFOA	112%	50-150%
	13C9-PFNA	112%	50-150%
	13C6-PFDA	114%	50-150%
	13C7-PFUnDA	115%	50-150%

**Instrument Blank** Page 2 of 2

**Job Number:** FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q46-IBLK	3Q1641.D	1	03/07/19	NAF	n/a	n/a	S3Q46

Method: EPA 537M QSM5.1 B-15 The QC reported here applies to the following samples:

CAS No.	<b>ID Standard Recoveries</b>	Limits		
	13C2-PFDoDA	113%	50-150%	
	13C2-PFTeDA	100%	50-150%	
	13C3-PFBS	99%	50-150%	
	13C3-PFHxS	102%	50-150%	
	13C8-PFOS	105%	50-150%	
	13C8-FOSA	107%	50-150%	
	d3-MeFOSAA	115%	50-150%	
	13C2-4:2FTS	102%	50-150%	
	13C2-6:2FTS	111%	50-150%	
	13C2-8:2FTS	114%	50-150%	

### Page 1 of 2

Method: EPA 537M BY ID

Blank Spike Summary Job Number: FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	Prep Date	<b>Prep Batch</b>	<b>Analytical Batch</b>
OP74055-BS	3Q1685.D	1	03/07/19	NAF	03/06/19	OP74055	S3Q46

The QC reported here applies to the following samples:

		Spike	BSP	BSP	
CAS No.	Compound	ug/l	ug/l	<b>%</b>	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0789	99	70-130
2706-90-3	Perfluoropentanoic acid	0.08	0.0748	94	70-130
307-24-4	Perfluorohexanoic acid	0.08	0.0753	94	70-130
375-85-9	Perfluoroheptanoic acid	0.08	0.0762	95	71-130
375-65-9	Perfluorooctanoic acid	0.08	0.0702	96	74-130
375-95-1	Perfluorononanoic acid	0.08	0.0771	94	76-130
375-95-1	Perfluorodecanoic acid	0.08	0.0751	94	70-130
2058-94-8	Perfluoroundecanoic acid	0.08	0.0731	92	70-130
307-55-1	Perfluorododecanoic acid	0.08	0.0716	90	70-130
72629-94-8		0.08	0.0689	86	70-139
376-06-7	Perfluorotetradecanoic acid	0.08	0.0682	85	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0741	93	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0709	89	70-130
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0752	94	74-130
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0721	90	74-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0747	93	70-130
68259-12-1		0.08	0.0564	71	70-130
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0425	53* a	70-130
754-91-6	PFOSA	0.08	0.0787	98	70-131
2355-31-9	MeFOSAA	0.08	0.0789	99	70-130
2991-50-6	EtFOSAA	0.08	0.0627	78	70-130
757124-72-	44:2 Fluorotelomer sulfonate	0.08	0.0773	97	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0796	100	70-133
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0781	98	70-130

CAS No.	<b>ID Standard Recoveries</b>	BSP	Limits
	13C4-PFBA	91%	30-140%
	13C5-PFPeA	94%	40-140%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	100%	50-150%
	13C8-PFOA	114%	50-150%
	13C9-PFNA	113%	50-150%
	13C6-PFDA	92%	50-150%
	13C7-PFUnDA	80%	50-150%

<sup>\* =</sup> Outside of Control Limits.

### Page 2 of 2

# Blank Spike Summary Job Number: FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample OP74055-BS	<b>File ID</b> 3Q1685.D	<b>DF</b> 1	<b>Analyzed</b> 03/07/19	<b>By</b> NAF	<b>Prep Date</b> 03/06/19	Prep Batch OP74055	Analytical Batch S3Q46

The QC reported here applies to the following samples: Method: EPA 537M BY ID

FA62041-1

CAS No.	<b>ID Standard Recoveries</b>	BSP	Limits
	13C2-PFDoDA	70%	50-150%
	13C2-PFTeDA	74%	40-150%
	13C3-PFBS	94%	50-150%
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	70%	50-150%
	13C8-FOSA	88%	30-140%
	d3-MeFOSAA	89%	50-150%
	13C2-4:2FTS	104%	50-150%
	13C2-6:2FTS	127%	50-150%
	13C2-8:2FTS	105%	50-150%

(a) Sporadic marginal failure.



<sup>\* =</sup> Outside of Control Limits.

Method: EPA 537M BY ID

# Matrix Spike Summary Job Number: FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74055-MS	3Q1688.D	1	03/08/19	NAF	03/06/19	OP74055	S3Q46
FA62041-1 <sup>a</sup>	3Q1687.D	1	03/07/19	NAF	03/06/19	OP74055	S3Q46

The QC reported here applies to the following samples:

		FA62041-1	Spike	MS	MS	
CAS No.	Compound	ug/l Q	ug/l	ug/l	<b>%</b>	Limits
375-22-4	Perfluorobutanoic acid	0.00198 B	0.0769	0.0694	88	70-130
2706-90-3	Perfluoropentanoic acid	0.00223	0.0769	0.0681	86	70-130
307-24-4	Perfluorohexanoic acid	0.00226	0.0769	0.0689	87	70-130
375-85-9	Perfluoroheptanoic acid	0.00119	0.0769	0.0680	87	71-130
335-67-1	Perfluorooctanoic acid	0.00155	0.0769	0.0695	88	74-130
375-95-1	Perfluorononanoic acid	ND	0.0769	0.0670	87	76-130
335-76-2	Perfluorodecanoic acid	ND	0.0769	0.0677	88	70-130
2058-94-8	Perfluoroundecanoic acid	ND	0.0769	0.0681	89	70-130
307-55-1	Perfluorododecanoic acid	ND	0.0769	0.0671	87	70-130
72629-94-8	Perfluorotridecanoic acid	ND	0.0769	0.0748	97	70-139
376-06-7	Perfluorotetradecanoic acid	ND	0.0769	0.0678	88	70-130
375-73-5	Perfluorobutanesulfonic acid	ND	0.0769	0.0671	87	73-130
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0769	0.0662	86	70-130
355-46-4	Perfluorohexanesulfonic acid	0.00150	0.0769	0.0686	87	74-130
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0769	0.0681	89	74-130
1763-23-1	Perfluorooctanesulfonic acid	0.00172	0.0769	0.0670	85	70-130
68259-12-1	Perfluorononanesulfonic acid	ND	0.0769	0.0583	76	70-130
335-77-3	Perfluorodecanesulfonic acid	ND	0.0769	0.0472	61*	70-130
754-91-6	PFOSA	ND	0.0769	0.0699	91	70-131
2355-31-9	MeFOSAA	ND	0.0769	0.0702	91	70-130
2991-50-6	EtFOSAA	ND	0.0769	0.0604	79	70-130
757124-72-	44:2 Fluorotelomer sulfonate	ND	0.0769	0.0694	90	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0769	0.0706	92	70-133
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0769	0.0697	91	70-130

CAS No.	<b>ID Standard Recoveries</b>	MS	FA62041-1	Limits
	13C4-PFBA	88%	86%	30-140%
	13C5-PFPeA	93%	92%	40-140%
	13C5-PFHxA	99%	100%	50-150%
	13C4-PFHpA	102%	105%	50-150%
	13C8-PFOA	112%	120%	50-150%
	13C9-PFNA	111%	117%	50-150%
	13C6-PFDA	97%	102%	50-150%
	13C7-PFUnDA	90%	93%	50-150%

<sup>\* =</sup> Outside of Control Limits.

Page 2 of 2

Method: EPA 537M BY ID

# Matrix Spike Summary Job Number: FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

File ID	DF	Analyzed	By	Prep Date	Prep Batch	<b>Analytical Batch</b>
3Q1688.D	1	03/08/19	NAF	03/06/19	OP74055	S3Q46
3Q1687.D	1	03/07/19	NAF	03/06/19	OP74055	S3Q46
	3Q1688.D	3Q1688.D 1	3Q1688.D 1 03/08/19	3Q1688.D 1 03/08/19 NAF	3Q1688.D 1 03/08/19 NAF 03/06/19	3Q1688.D 1 03/08/19 NAF 03/06/19 OP74055

The QC reported here applies to the following samples:

CAS No.	ID Standard Recoveries	MS	FA62041-1	Limits
	13C2-PFDoDA	82%	84%	50-150%
	13C2-PFTeDA	83%	87%	40-150%
	13C3-PFBS	90%	91%	50-150%
	13C3-PFHxS	89%	91%	50-150%
	13C8-PFOS	80%	82%	50-150%
	13C8-FOSA	87%	89%	30-140%
	d3-MeFOSAA	95%	100%	50-150%
	13C2-4:2FTS	106%	103%	50-150%
	13C2-6:2FTS	127%	128%	50-150%
	13C2-8:2FTS	108%	108%	50-150%

<sup>(</sup>a) Insufficient sample for re-extraction.

<sup>\* =</sup> Outside of Control Limits.

Method: EPA 537M BY ID

# **Duplicate Summary Job Number:** FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	<b>Analytical Batch</b>
OP74055-DUP	3Q1690.D	1	03/08/19	NAF	03/06/19	OP74055	S3Q46
FA62042-1	3Q1689.D	1	03/08/19	NAF	03/06/19	OP74055	S3Q46

The QC reported here applies to the following samples:

	FA62042	-1	DUP			
Compound	ug/l	Q	ug/l	Q	RPD	Limits
D 0 1 1 1 1 1 1	) ID					••
					nc	30
<u> </u>					nc	30
	0.00193		0.00193	J	0	30
Perfluoroheptanoic acid	ND		ND		nc	30
Perfluorooctanoic acid	0.000964		ND		200*	30
Perfluorononanoic acid	ND		ND		nc	30
Perfluorodecanoic acid	ND		ND		nc	30
Perfluoroundecanoic acid	ND		ND		nc	30
Perfluorododecanoic acid	ND		ND		nc	30
Perfluorotridecanoic acid	ND		ND		nc	30
Perfluorotetradecanoic acid	ND		ND		nc	30
Perfluorobutanesulfonic acid	0.00313		0.00316	J	1	30
Perfluoropentanesulfonic acid	0.00275		0.00274	J	0	30
Perfluorohexanesulfonic acid	0.00641		0.00647		1	30
Perfluoroheptanesulfonic acid	ND		ND		nc	30
Perfluorooctanesulfonic acid	0.00221		0.00234	J	6	30
Perfluorononanesulfonic acid	ND		ND		nc	30
Perfluorodecanesulfonic acid	ND		ND		nc	30
PFOSA	ND		ND		nc	30
MeFOSAA	ND		ND		nc	30
EtFOSAA	ND		ND		nc	30
44:2 Fluorotelomer sulfonate	ND		ND		nc	30
6:2 Fluorotelomer sulfonate	ND		ND		nc	30
8:2 Fluorotelomer sulfonate	ND		ND		nc	30
	Perfluorobutanoic acid Perfluorohexanoic acid Perfluorohexanoic acid Perfluoroheptanoic acid Perfluoroctanoic acid Perfluoroctanoic acid Perfluorodecanoic acid Perfluorodecanoic acid Perfluorododecanoic acid Perfluorotridecanoic acid Perfluorotridecanoic acid Perfluorotetradecanoic acid Perfluorobutanesulfonic acid Perfluoropentanesulfonic acid Perfluorohexanesulfonic acid Perfluorohexanesulfonic acid Perfluorodecanesulfonic acid Perfluoroctanesulfonic acid Perfluorodecanesulfonic acid Perfluorodecanesulfonic acid Perfluorodecanesulfonic acid Perfluorodecanesulfonic acid Perfluorodecanesulfonic acid Perfluorodecanesulfonic acid PEOSAA MeFOSAA EtFOSAA 44:2 Fluorotelomer sulfonate 6:2 Fluorotelomer sulfonate	Perfluorobutanoic acid ND Perfluorohexanoic acid ND Perfluorohexanoic acid ND Perfluoroheptanoic acid ND Perfluoroheptanoic acid ND Perfluoroctanoic acid ND Perfluorodecanoic acid ND Perfluorodecanoic acid ND Perfluorodecanoic acid ND Perfluorodecanoic acid ND Perfluorotetradecanoic acid ND Perfluorotetradecanoic acid ND Perfluorobutanesulfonic acid ND Perfluorobexanesulfonic acid ND Perfluorohexanesulfonic acid ND Perfluorodecanesulfonic acid ND Perfluorodecanesulfonic acid ND PFOSA ND MeFOSAA ND MeFOSAA ND StFOSAA ND	Perfluorobutanoic acid ND Perfluorohexanoic acid ND Perfluorohexanoic acid ND Perfluoroheptanoic acid ND Perfluorooctanoic acid ND Perfluorooctanoic acid ND Perfluorodecanoic acid ND Perfluorodecanoic acid ND Perfluorodecanoic acid ND Perfluorododecanoic acid ND Perfluorotridecanoic acid ND Perfluorotridecanoic acid ND Perfluorotridecanoic acid ND Perfluorotetradecanoic acid ND Perfluorobutanesulfonic acid ND Perfluorobutanesulfonic acid ND Perfluorobexanesulfonic acid ND Perfluorohexanesulfonic acid ND Perfluorohexanesulfonic acid ND Perfluoroheptanesulfonic acid ND Perfluorooctanesulfonic acid ND Perfluorodecanesulfonic acid ND N	Compoundug/lQug/lPerfluorobutanoic acidNDNDPerfluoropentanoic acidNDNDPerfluorohexanoic acid0.001930.00193Perfluoroheptanoic acidNDNDPerfluorooctanoic acidNDNDPerfluorononanoic acidNDNDPerfluorodecanoic acidNDNDPerfluoroundecanoic acidNDNDPerfluorododecanoic acidNDNDPerfluorotetradecanoic acidNDNDPerfluorobutanesulfonic acid0.003130.00316Perfluoropentanesulfonic acid0.002750.00274Perfluorohexanesulfonic acid0.006410.00647Perfluorooctanesulfonic acidNDNDPerfluorodecanesulfonic acidNDNDPerfluorodecanesulfonic acidNDNDPFOSANDNDMeFOSAANDND44:2 Fluorotelomer sulfonateNDND6:2 Fluorotelomer sulfonateNDND	Compoundug/lQug/lQPerfluorobutanoic acidNDNDPerfluoropentanoic acidNDNDPerfluorohexanoic acid0.001930.00193JPerfluoroheptanoic acidNDNDPerfluorooctanoic acidNDNDPerfluorononanoic acidNDNDPerfluorodecanoic acidNDNDPerfluoroundecanoic acidNDNDPerfluorododecanoic acidNDNDPerfluorotridecanoic acidNDNDPerfluorotetradecanoic acidNDNDPerfluorobutanesulfonic acid0.003130.00316JPerfluorohexanesulfonic acid0.002750.00274JPerfluorohexanesulfonic acid0.006410.00647Perfluorooctanesulfonic acidNDNDPerfluorodecanesulfonic acidNDNDPerfluorodecanesulfonic acidNDNDPFOSANDNDMeFOSAANDND44:2 Fluorotelomer sulfonateNDND6:2 Fluorotelomer sulfonateNDND	Perfluorobutanoic acid ND ND nc Perfluoroctanoic acid ND ND nc Perfluorodecanoic acid ND ND nc Perfluorodecanoic acid ND ND nc Perfluorotridecanoic acid ND ND nc Perfluorotridecanoic acid ND ND nc Perfluorotridecanoic acid ND ND nc Perfluorotetradecanoic acid ND ND nc Perfluorotetradecanoic acid ND ND nc Perfluorotetradecanoic acid ND ND nc Perfluorobutanesulfonic acid 0.00313 0.00316 J 1 Perfluorohexanesulfonic acid 0.00275 0.00274 J 0 Perfluorohexanesulfonic acid ND ND nc Perfluorodecanesulfonic acid ND ND nc ND nc Perfluorodecanesulfonic acid ND ND nc ND nc ND nc ND ND ND nc ND ND nc ND ND ND ND nc ND

CAS No.	<b>ID Standard Recoveries</b>	DUP	FA62042-1	Limits
	13C4-PFBA	88%	86%	30-140%
	13C5-PFPeA	94%	91%	40-140%
	13C5-PFHxA	103%	99%	50-150%
	13C4-PFHpA	106%	103%	50-150%
	13C8-PFOA	120%	118%	50-150%
	13C9-PFNA	117%	117%	50-150%
	13C6-PFDA	98%	100%	50-150%
	13C7-PFUnDA	93%	94%	50-150%

<sup>\* =</sup> Outside of Control Limits.

Method: EPA 537M BY ID

# **Duplicate Summary Job Number:** FA62041

Account: SGSAKA SGS North America, Inc

**Project:** 1199072

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	<b>Analytical Batch</b>
OP74055-DUP	3Q1690.D	1	03/08/19	NAF	03/06/19	OP74055	S3Q46
FA62042-1	3Q1689.D	1	03/08/19	NAF	03/06/19	OP74055	S3Q46

The QC reported here applies to the following samples:

CAS No.	ID Standard Recoveries	DUP	FA62042-1	Limits	
	13C2-PFDoDA	85%	85%	50-150%	
	13C2-PFTeDA	96%	90%	40-150%	
	13C3-PFBS	92%	90%	50-150%	
	13C3-PFHxS	89%	89%	50-150%	
	13C8-PFOS	73%	78%	50-150%	
	13C8-FOSA	89%	90%	30-140%	
	d3-MeFOSAA	96%	98%	50-150%	
	13C2-4:2FTS	106%	101%	50-150%	
	13C2-6:2FTS	130%	128%	50-150%	
	13C2-8:2FTS	106%	108%	50-150%	

<sup>\* =</sup> Outside of Control Limits.