

TABLES



Table 1. Summary of Prohibited and Acceptable Items for PFAS Sampling

Prohibited	Acceptable
Field Equipment	
Teflon® containing materials	High density polyethylene (HDPE), stainless steel or polypropylene materials
Low density polyethylene (LDPE) materials	Acetate liners
	Silicon tubing
Waterproof field books, waterproof paper and waterproof sample bottle labels	Loose non-waterproof paper and non-waterproof sample labels
Plastic clipboards, binders, or spiral hard cover notebooks	Aluminum field clipboards or with Masonite
Waterproof markers / Sharpies®	Pens
Post-It Notes®	
Chemical (blue) ice packs	Regular ice
Field Clothing and PPE	
New cotton clothing or synthetic water resistant, waterproof, or stain-treated clothing, clothing containing Gore-Tex™	Well-laundered clothing made of natural fibers (preferable cotton)
Clothing laundered using fabric softener	No fabric softener
Boots containing Gore-Tex™ or treated with water-resistant spray	Boots made with polyurethane and PVC
Tyvek®	Laundered cotton clothing
No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling	Sunscreens - Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss My Face, and baby sunscreens that are "chemical free", "toxin free" or "natural"
Sunscreens or insecticides except as noted on right	Insect Repellents - Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellent, Herbal Armor, California Baby Natural Bug Spray, Baby Ganics Sunscreen and insect repellent - Avon Skin So Soft Bug Guard Plus - SPF 30 Lotion
Sample Containers	
LDPE or glass containers	HDPE or polypropylene
Teflon®-lined caps	Unlined polypropylene caps
Rain Events	
Waterproof or resistant rain gear	Wet weather gear made of polyurethane and PVC only; field tents that are only touched or moved prior to and following sampling activities
Equipment Decontamination	
Decon 90®	Alconox® and/or Liquinox®
Water from an on-site well Potable water from untested public water supply	Potable water from tested (and PFAS free) public drinking water supply
Food Considerations	
All food and drink, with exceptions noted on right	Bottled water and hydration fluids (i.e., Gatorade® and Powerade®) to be brought and consumed only in the staging areas
Vehicle Considerations	
Vehicle fabrics, carpets and mats may contain PFAS	Avoid utilizing areas inside vehicle as sample staging areas.

TABLE 2
RACER Trust - Coldwater Road Landfill
Perfluorinated Compound Sampling Results - November 2016

Perfluorinated Compound	Well/Sample	B-7	B-7	B-19Ar	Sump D	Equipment	Watera	Field Blank
	Sample Date:	11/30/2016	11/30/2016	11/30/2016	11/29/2016	11/29/2016	11/29/2016	11/30/2016
Perfluorobutanoic acid (PFBA)		9.2 J	7.1 J	1.0 J	440 J	<1.9	<1.8	<2.0
Perfluoropentanoic acid (PFPeA)		2.6	1.7 J	<2.0	300 J	<1.9	<1.8	<2.0
Perfluorohexanoic acid (PFHxA)		3.9	3.1	<2.0	99 JN	<1.9	<1.8	<2.0
Perfluoroheptanoic acid (PFHpA)		2.4	1.6 J	<2.0	24	<1.9	<1.8	<2.0
Perfluorooctanoic acid (PFOA)		9.2 JN	7.6 JN	0.84 JN	130 JN	<1.9	<1.8	<2.0
Perfluorononanoic acid (PFNA)		0.87 J	0.79 J	<2.0	7.1 JN	<1.9	<1.8	<2.0
Perfluorotetradecanoic acid (PFTeA)		<2.0 U	<2.0 U	<2.0 U	<19	<2.0 U	<2.0 U	<2.0 U
Perfluorobutanesulfonic acid (PFBS)		5.7	5.8	<2.0	74	<1.9	<1.8	<2.0
Perfluorohexanesulfonic acid (PFHxS)		23	22 JN	1.0 J	370	<1.9	<1.8	<2.0
Perfluoroheptanesulfonic Acid (PFHpS)		3.8	3.9	<2.0	83	<1.9	<1.8	<2.0
Perfluorooctanesulfonic acid (PFOS)		220	230	3.9	5,800	<1.9	<1.8	<2.0

Notes

- 1) Concentrations in ng/L.
- 2) < = Not detected at specified reporting limit.
- 3) J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
- 4) JN - Indicates that the target analyte has been "tentatively identified" as present and the associated numerical value is the estimated concentration in the sample. This qualifier may be applied due to data interpretation issues.
- 5) U - Indicates that the analyte was not detected and the sample RL is presented. This qualifier is also used to signify blank excursions.
- 6) F1 - MS and/or MSD Recovery is outside acceptance limits.
- 7) F2 - MS/MSD RPD exceeds control limits.
- 8) Concentrations above the USEPA advisory level (70 ng/L PFOA+PFOS) and/or MDEQ proposed drinking water criteria (70 ng/L PFOA/70 ng/L PFOS) are highlighted in yellow.



TABLE 3
RACER Trust - Coldwater Road Landfill
Perfluorinated Compound Sampling Results - June 2017

Perfluorinated Compound	Well/Sample ID:	B-9	B-18A	B-24r	B-27D	B-28	OBG-MW-7	OBG-MW-9	FB-01	EB-01 Bladder
	Sample Date:	6/20/2017	6/20/2017	6/20/2017	6/20/2017	6/20/2017	6/20/2017	6/20/2017	6/19/2017	6/20/2017
Perfluorobutanoic acid (PFBA)		14 B/	4.2 B/	14 B/	2.0 B/	2.9 B/	8.0 B/	1.4 J B/	0.92 J B/	0.59 J B/
Perfluoropentanoic acid (PFPeA)		2.2	<0.94	<0.93	<0.95	<0.96	<0.96	<0.94	<0.95	<0.98
Perfluorohexanoic acid (PFHxA)		9.3	<0.75	3.9	<0.75	0.92 J/	1.0 J/	<0.75	<0.76	<0.78
Perfluoroheptanoic acid (PFHpA)		4.2	<76	1.7 J/	<0.77	<0.78	<0.78	<0.76	<0.77	<0.79
Perfluorooctanoic acid (PFOA)		15	1.2 J/	3.9	<0.72	0.79 J/	<0.72	1.1 J/	<0.72	<0.74
Perfluoroundecanoic acid (PFUnA)		<0.73	<0.71	<0.70	1.4 J/	<0.73	<0.72	<0.71	<0.72	<0.74
Perfluorotetradecanoic acid (PFTeA)		1.2 J B/	<0.19	<0.19	<0.19	<0.19	1.0 J B/	<0.19	<0.19	0.89 J B/
Perfluorobutanesulfonic acid (PFBS)		2.3	<0.87	3.7	<0.88	<0.89	<0.86	2.0	<0.89	<0.91
Perfluorohexanesulfonic acid (PFHxS)		6.9	<0.83	5.4	<0.83	<0.84	<0.84	5.0	<0.84	<0.86
Perfluoroheptanesulfonic Acid (PFHpS)		0.70 J/	<0.68	<0.67	<0.68	<0.69	<0.69	<0.68	<0.69	<0.70
Perfluorooctanesulfonic acid (PFOS)		13	1.3 J/	5.0	<1.2	1.7 J/	<1.9	2.9	1.4 J/	<1.3
Perfluorooctance Sulfonamide (FOSA)		3.3 J H/	<0.61	0.66 J/	<0.61	1.2 J/	<0.62	<0.61	<0.62	<0.63
6:2FTS		<3.7	<3.6	<3.6	<3.7	3.7	<3.7	<3.6	<3.7	<3.8

Perfluorinated Compound	Well/Sample ID:	SUMP A	Vault A	SUMP B	Vault B	SUMP C	Vault C	Vault D	SUMP E	Vault E	DUP 1 (Vault E)	SUMP F	Vault F
	Sample Date:	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017	6/19/2017
Perfluorobutanoic acid (PFBA)		220 B/	18.0 B/	480 B/	4.6 B/	490 B/	19 B/	5.3 B/	48 B/	8.6 B	8.0 B/	260 B	6.8 B/
Perfluoropentanoic acid (PFPeA)		260	1.9	410	<0.98	1100 Cl/	<0.94	7	86	<0.96	4.7	330	15
Perfluorohexanoic acid (PFHxA)		110	4.9	280	0.79 J	390	6.0	<0.80	65	6.5	6.3	150	13
Perfluoroheptanoic acid (PFHpA)		<0.78	4.4	17	<0.79	80	3.3	<0.96 J	77	5.5	5.3	67	12
Perfluorooctanoic acid (PFOA)		54	16.0	230	4.1	230	12	9.9	95	24	25	80	57
Perfluorononanoic acid (PFNA)		<0.64	<0.64	29 Cl/	<0.65	18	<0.62	<0.67	21	<0.63	0.6 J/	9.7	1.2 J
Perfluorodecanoic acid (PFDA)		<0.43	<0.43	<0.43	<0.44	<0.43	<0.42	<0.45	1.6 J/	<0.43	<0.43	1.0 J/	<0.42
Perfluoroundecanoic acid (PFUnA)		<0.73	<0.73	<0.73	<0.74	<0.73	<0.71	<0.76	1.7 J/	<0.72	<0.74	<0.74	<0.71
Perfluorotetradecanoic acid (PFTeA)		<0.19	<0.19	0.37 J B/	<0.20	<0.19	0.21 J B/	0.25 J B/	0.21 J B/	<0.19	0.4 J B/	<0.20	<0.19
Perfluorobutanesulfonic acid (PFBS)		310 Cl/	9.3	190 J/	4.1	410	<0.88	11	57	13	12	100	12
Perfluorohexanesulfonic acid (PFHxS)		410	32	650	12	1200	<0.83	33	170	65	63	390	35
Perfluoroheptanesulfonic Acid (PFHpS)		150	7.2	140	2.4	200	<0.68	8.4	55	15	15.0	82	7.3
Perfluorodecanesulfonic acid (PFDS)		4.3	<1.2	2.6	<1.2	1.9	<1.2	<1.2	1.2 J/	<1.2	<1.2	<1.2	<1.2
Perfluorooctanesulfonic acid (PFOS)		13000	450	9600	150.0	12000	440	350	3400	730	730	5400	300
Perfluorooctance Sulfonamide (FOSA)		8.1 J B/	<0.62	6.1 J B/	<0.63	8.2 J B/	<0.61	<0.65	4.7 J B/	3.5 J H/	16 J B/	6.1 J B/	22 J H/

Notes

- 1) Concentrations in ng/L.
- 2) < = Not detected at specified detection limit.
- 3) B = Compound was found in the blank and the sample.
- 4) Cl = The peak identified in the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be high bias.
- 5) J = Result is less than the Reporting Limit (RL) but greater than or equal to the Method Detection Limit (MDL) and the concentration is an approximate value.
- 6) H = Sample was Prepped or analyzed beyond the specified holding time.
- 7) Dup = Duplicate sample.
- 8) Concentrations above the USEPA advisory level (70 ng/L PFOA+PFOS) and/or MDEQ proposed drinking water criteria (70 ng/L PFOA/70 ng/L PFOS) are highlighted in yellow.

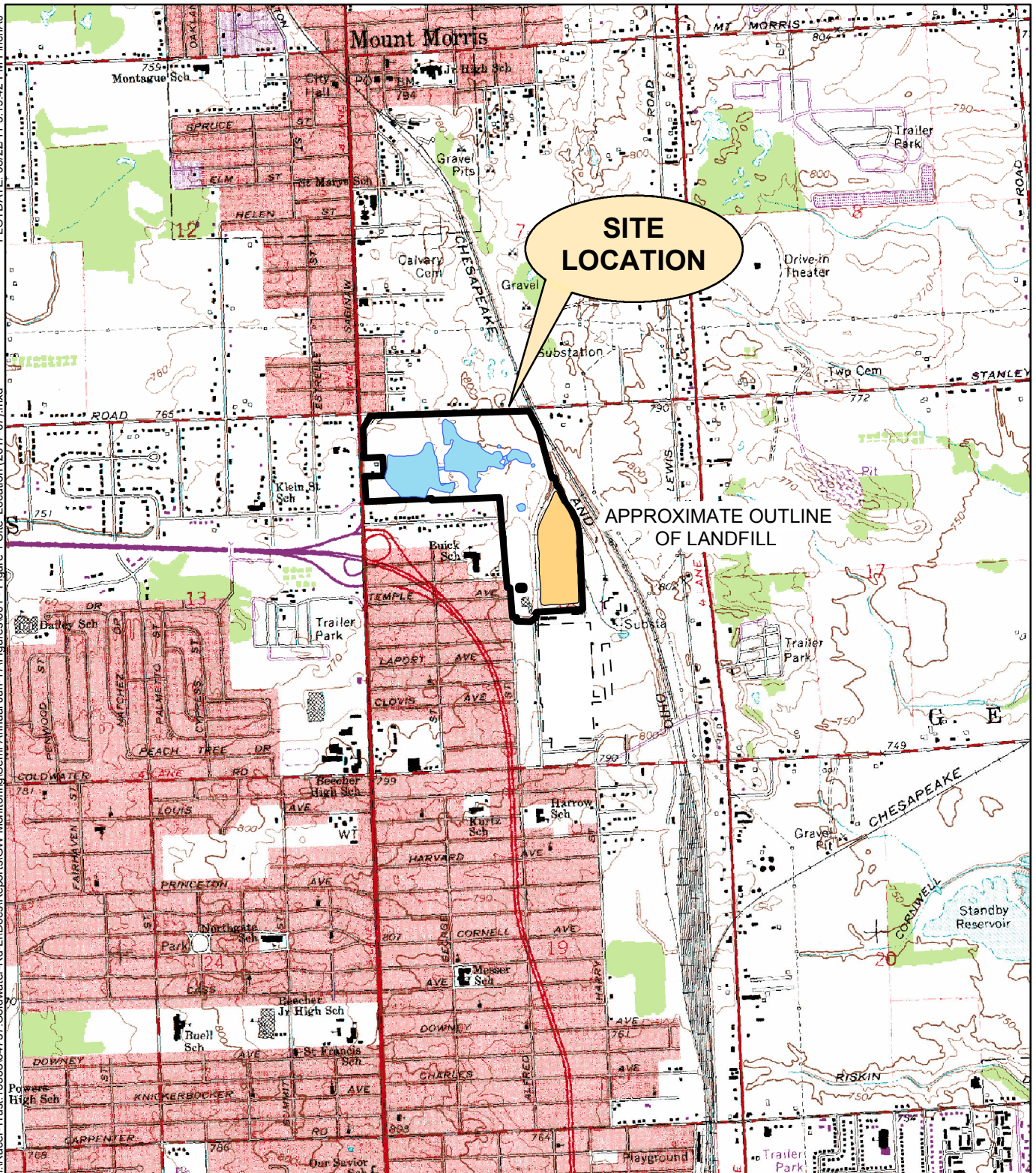




FIGURES



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**RACER TRUST
COLDWATER ROAD LANDFILL FACILITY
FLINT, MICHIGAN**

SITE LOCATION MAP



Miles







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I:\Racer-Trust\15388\64737 Coldwater-Rd-L\Docs\Reports\PFAS Info - Data and Reports\Figures\004 - Figure 2 Sample Well Locations.mxd

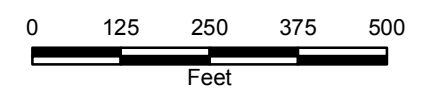


LEGEND

-  LEACHATE COLLECTION SUMP
-  ACCESS PORT FOR LEAK DETECTION VAULT
-  MONITORING WELL
-  ABANDONED WELL

RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

PFAS SAMPLING LOCATIONS



AUGUST 2017
15388/64737/002



O'BRIEN & GERE ENGINEERS, INC.

ATTACHMENT A
Sampling Checklist

Attachment A

PFAS Sampling Checklist

Date: _____

Weather (temp/precip): _____ Site Name: _____

Field Clothing and PPE:

- No clothing or boots containing Gore-Tex™
- No clothing or boots treated with water-resistant spray
- Safety boots made from polyurethane and PVC
- No materials containing Tyvek®
- Field crew has not used fabric softener on clothing
- Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- No Teflon® or LDPE containing materials
- All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- No waterproof field books, waterproof paper or waterproof bottle labels, waterproof markers / Sharpies®
- No plastic clipboards, binders, or spiral hard cover notebooks
- No Post-It Notes®

- Coolers filled with regular ice only; no chemical (blue) ice packs in possession

Sample Containers:

- Sample containers made of HDPE or polypropylene
- Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- "PFAS-free" water on-site for decontamination of sample equipment; no other water sources to be used
- Alconox® and Liquinox® to be used as decontamination cleaning agents

Food Considerations:

- No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade® and Powerade®) that is available for consumption only in the staging area

Vehicle Considerations:

- Avoid utilizing areas inside vehicle as sample staging areas

If any applicable boxes cannot be checked, the field team leader shall describe the deviations below and work with field personnel to address issues prior to commencement of that day's work. If possible, materials identified as potentially containing PFAS (i.e., Tyvek® coveralls, spare equipment) should be relocated to a separate area of the site as far away as possible from the sampling location(s) and containerized if practicable. To assist in the assessment of QC data, the field team leader should document the presence of such items, their location, whether they have been containerized, and, if containerized, what type of container.

Describe any deviation(s) and the action/outcome and document the presence of any potential PFAS-containing materials:

Field Team Leader Name: _____

Field Team Leader Signature: _____ Time: _____

ATTACHMENT B
*Groundwater Sampling
Logs*



O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/19/17
 Site Name Coldwater rd
 Location Flint, MI
 Project No. 64737
 Personnel CSV

Weather Partly Cloudy, Hot (~81°F), light wind
 Well # B-9
 Evacuation Method WHALE PUMP
 Sampling Method PURGED DRY

Well Information:

Depth of Well * 24.6 ft.
 Depth to Water * 0.28 ft.
 Length of Water Column 18.32 ft.
 Volume of Water in Well 2.9 gal.(s)
 3X Volume of Water in Well 8.9 gal.(s)

Water Volume /ft. for:
X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling 4.7 gal.(s)
 Did well go dry? Yes

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration: Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

6/19/17

Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial <u>24.6</u>	initial <u>12.00</u>	initial <u>2.47</u>	initial <u>2.47</u>	initial <u>6.88</u>	initial <u>37.0</u>	initial <u>43</u>
5 min <u>14:56</u>	<u>15.8</u>	<u>2.47</u>	<u>0.76</u>	<u>6.68</u>	<u>35.1</u>	<u>45</u>
10 min <u>15:00</u>	<u>20.53</u>	<u>2.47</u>	<u>0.57</u>	<u>6.70</u>	<u>37.8</u>	<u>211</u>
15 min <u>15:05</u>	<u>11.7</u>	<u>2.47</u>	<u>0.64</u>	<u>6.75</u>	<u>38.0</u>	<u>86</u>
20 min <u>15:10</u>	<u>11.7</u>	<u>2.47</u>	<u>0.64</u>	<u>6.75</u>	<u>37.6</u>	<u>613</u>
25 min <u>15:15</u>	<u>let recover</u>	<u>for 5 minutes</u>	<u>then pump</u>	<u>dry again</u>		
30 min <u>21:30</u>	<u>purged</u>	<u>down to</u>	<u>24.5</u>			
35 min						
40 min <u>6/20/17</u>	<u>purged</u>	<u>4.7 gallons</u>				
45 min						
50 min						
55 min <u>14:15</u>	<u>12.5</u>	<u>2.23</u>	<u>13.00</u>	<u>6.71</u>	<u>37.8</u>	
60 min <u>14:20</u>	<u>12.1</u>	<u>2.22</u>	<u>12.37</u>	<u>6.70</u>	<u>52.6</u>	
<u>14:25</u>	<u>12.3</u>	<u>2.20</u>	<u>15.77</u>	<u>6.70</u>	<u>67.4</u>	<u>35</u>

Water Sample:

Time Collected 14:25

Physical Appearance at Start

Color Clear
 Odor Musty
 Turbidity (> 100 NTU) 43
 Sheen/Free Product None

Physical Appearance at Sampling

Color Clear
 Odor Musty
 Turbidity (> 100 NTU) 35
 Sheen/Free Product None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6-19-2017
 Site Name Coldwater Road
 Location Flint, MI
 Project No. 64737
 Personnel CSY

Weather Sunny
 Well # B 18A
 Evacuation Method WHALE PUMP / BLADDER PUMP
 Sampling Method PURGE DRY

Well Information:

Depth of Well * 43.5 ft.
 Depth to Water * 24.05 ft.
 Length of Water Column 31.45 ft.
 Volume of Water in Well 3.17 gal.(s)
 3X Volume of Water in Well 9.51 gal.(s)

Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
 4" Diameter Well = 0.653 X LWC
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 9 gal.(s)
 Did well go dry? Yes

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial <u>23.95</u>	initial <u>14.8</u>	initial <u>1.10</u>	initial <u>7.33</u>	initial <u>7.23</u>	initial <u>187</u>	initial <u>8</u>
5 min <u>39.15</u>	<u>11.2</u>	<u>1.04</u>	<u>0.88</u>	<u>6.76</u>	<u>131.5</u>	<u>39</u>
10 min <u>40.00</u>	<u>11.4</u>	<u>0.90</u>	<u>1.56</u>	<u>6.87</u>	<u>88.5</u>	<u>54</u>
15 min <u>41.00</u>	<u>11.4</u>	<u>1.29</u>	<u>1.49</u>	<u>6.90</u>	<u>81.5</u>	<u>62</u>
20 min <u>41.57</u>	<u>12.7</u>	<u>1.03</u>	<u>1.88</u>	<u>6.97</u>	<u>79.2</u>	<u>62</u>
25 min <u>end 42.2ft</u>	<u>Removed total of 9 gallons from well and sand pack.</u>					
30 min <u>13:00 - pumped "Dry" one last time</u>						
35 min <u>OK</u>						
40 min						<u>290</u>
45 min <u>38.95</u>	<u>23.8</u>	<u>1.06</u>	<u>2.93</u>	<u>7.06</u>	<u>128.7</u>	<u>64</u>
50 min <u>39.50</u>	<u>14.0</u>	<u>1.06</u>	<u>4.73</u>	<u>7.02</u>	<u>128.8</u>	<u>64</u>
55 min						
60 min						

Water Sample:

Time Collected 1410

Physical Appearance at Start

Physical Appearance at Sampling

Color Slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 8
 Sheen/Free Product NONE

Color Slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 64
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filter
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/19/2017 / 6/20/17
 Site Name Coldwater Rd
 Location Flint MI
 Project No. 64737
 Personnel CSY / KSS
 Weather Cloudy, light wind, humid, hot (85°)
 Well # B-24r
 Evacuation Method Waste Pump / Peristaltic Pump
 Sampling Method PURGED DRY

Well Information:

Depth of Well * 30.41 ft.
 Depth to Water * 14.22 ft.
 Length of Water Column 16.19 ft.
 Volume of Water in Well 2.6 gal.(s)
 3X Volume of Water in Well 7.9 gal.(s)
 Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
 4" Diameter Well = 0.653 X LWC
 6" Diameter Well = 1.469 X LWC
 Volume removed before sampling 8 gal.(s)
 Did well go dry? Yes
 (Other, Specify) _____
 * Measurements taken from Well Casing Protective Casing

Instrument Calibration: Calibrated within range
 pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial <u>14.22</u>	initial <u>14.22</u>	initial <u>1.20</u>	initial <u>1.04</u>	initial <u>6.90</u>	initial <u>77.3</u>	initial <u>678</u>
5 min <u>13:35</u>	<u>11.0</u>	<u>1.19</u>	<u>0.72</u>	<u>6.87</u>	<u>76.0</u>	<u>84</u>
10 min <u>13:40</u>	<u>11.0</u>	<u>1.19</u>	<u>0.63</u>	<u>6.91</u>	<u>73.0</u>	<u>67</u>
15 min <u>13:45</u>	<u>11.0</u>	<u>1.22</u>	<u>0.68</u>	<u>6.90</u>	<u>73.6</u>	<u>157</u>
20 min <u>13:55</u>	<u>11.0</u>	<u>1.30</u>	<u>0.91</u>	<u>7.02</u>	<u>72.1</u>	<u>937</u>
25 min <u>14:00</u>	<u>10.09</u>	<u>1.24</u>	<u>0.98</u>	<u>7.03</u>	<u>67.3</u>	<u>430</u>
30 min <u>14:05</u>	<u>11.0</u>	<u>1.19</u>	<u>0.64</u>	<u>7.07</u>	<u>47.0</u>	<u>236</u>
35 min <u>14:10</u>	<u>11.4</u>	<u>1.15</u>	<u>0.52</u>	<u>7.10</u>	<u>26.6</u>	<u>131</u>
40 min <u>14:15</u>	<u>"Dry"</u>	<u>29.6</u>				
45 min						
50 min						
55 min						
60 min <u>14:31</u>	<u>10.6</u>	<u>1.24</u>	<u>8.00</u>	<u>7.25</u>	<u>29.3</u>	

Water Sample: 16-18 (1055) 10.6 1.24 7.25 7.23 36.7 99
 Time Collected

Physical Appearance at Start: Color light gray, Odor NONE, Turbidity (> 100 NTU) 678, Sheen/Free Product NONE
 Physical Appearance at Sampling: Color Slightly cloudy, Odor NONE, Turbidity (> 100 NTU) 99, Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/20/2017
 Site Name RACER/ Coldwater Road
 Location Flint MI
 Project No. 64737
 Personnel CSY

Weather Mostly cloudy
 Well # B 27A
 Evacuation Method Bladder Pump
 Sampling Method Low Flow

Well Information:

Depth of Well * 87.30 ft.
 Depth to Water * 75.69 ft.
 Length of Water Column 11.61 ft.
 Volume of Water in Well 1.89 gal.(s)
 3X Volume of Water in Well 6.07 gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling _____ gal.(s)
 Did well go dry? No

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

9:05
 9:10
 9:15
 9:20
 9:25
 9:30
 9:35
 9:40
 9:45
 9:50
 9:55
 10:00
 10:05

Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial <u>75.98</u>	initial <u>14.5</u>	initial <u>0.601</u>	initial <u>0.65</u>	initial <u>6.93</u>	initial <u>-5.6</u> <u>-210.2</u>	initial <u>1100</u>
5 min <u>76.00</u>	<u>13.9</u>	<u>0.603</u>	<u>0.39</u>	<u>7.04</u>	<u>-40.7</u>	<u>1100</u>
10 min <u>76.00</u>	<u>13.9</u>	<u>0.603</u>	<u>0.36</u>	<u>7.06</u>	<u>-47.7</u>	<u>1100</u>
15 min _____	<u>14.0</u>	<u>0.604</u>	<u>0.32</u>	<u>7.13</u>	<u>-57.2</u>	<u>1100</u>
20 min _____	<u>14.4</u>	<u>0.604</u>	<u>0.33</u>	<u>7.19</u>	<u>-62.9</u>	<u>1100</u>
25 min _____	<u>13.9</u>	<u>0.607</u>	<u>0.28</u>	<u>7.23</u>	<u>-67.7</u>	<u>1100</u>
30 min _____	<u>14.4</u>	<u>0.605</u>	<u>0.26</u>	<u>7.21</u>	<u>-69.0</u>	<u>998</u>
35 min _____	<u>14.7</u>	<u>0.606</u>	<u>0.27</u>	<u>7.28</u>	<u>-74.7</u>	<u>1100</u>
40 min _____	<u>14.3</u>	<u>0.606</u>	<u>0.29</u>	<u>7.28</u>	<u>-77.2</u>	<u>1100</u>
45 min _____	<u>14.3</u>	<u>0.606</u>	<u>0.26</u>	<u>7.27</u>	<u>-78.3</u>	<u>1027</u>
50 min _____	<u>14.6</u>	<u>0.607</u>	<u>0.22</u>	<u>7.32</u>	<u>-83.4</u>	<u>1031</u>
55 min _____	<u>14.5</u>	<u>0.607</u>	<u>0.21</u>	<u>7.31</u>	<u>-85.1</u>	<u>933</u>
60 min _____	<u>14.6</u>	<u>0.607</u>	<u>0.20</u>	<u>7.32</u>	<u>-86.1</u>	<u>991</u>

Water Sample:
 Time Collected

10:18

OVER =>

Physical Appearance at Start

Physical Appearance at Sampling

Color light Gmy
 Odor NONE
 Turbidity (> 100 NTU) >1100
 Sheen/Free Product NONE

Color Slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 98
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

127 final turb after sample collection

Time	DTW	T ²	Cond	DO	pH	ORP	Turbidity
10 ¹⁰	—	14.7	0.606	0.18	7.33	-87.2	1100
10 ¹⁵	—	14.9	0.606	0.18	7.35	-87.9	1100
10 ²⁰	—	14.9	0.607	0.17	7.36	-88.9	1100
10 ²⁵	—	15.0	0.607	0.17	7.36	-89.6	1100
10 ³⁰	—	14.5	0.606	0.18	7.30	-87.0	1100
10 ³⁵	—	13.7	0.608	0.20	7.24	-82.9	1100
10 ⁴⁰	—	13.6	0.605	0.20	7.23	-82.6	1063
10 ⁴⁵	—	13.9	0.608	0.18	7.29	-83.2	1063
10:50	—	13.9	0.608	0.18	7.33	-91.3	871
10:55	—	13.8	0.609	0.18	7.35	-93.4	795
11:00	—	13.7	0.609	0.18	7.34	-93.9	608
11:05	—	13.9	0.607	0.18	7.34	-94.5	471
11:10	—	13.4	0.606	0.19	7.33	-94.3	388
11:15	—	14.0	0.600	0.18	7.30	-93.1	322
11:20	—	14.0	0.602	0.18	7.36	-97.0	277
11:25	—	14.1	0.580	0.15	7.34	-96.9	250
11:30	—	13.9	0.548	0.18	7.36	-97.5	213
11:35	—	13.9	0.519	0.17	7.34	-97.2	185
11:40	—	13.9	0.516	0.16	7.34	-97.3	169
11:45	—	14.5	0.509	0.16	7.40	-101.3	173
11:50	—	14.3	0.510	0.15	7.40	-101.5	145
11:55	—	14.4	0.509	0.15	7.35	-99.0	126
12:00	—	14.0	0.443	0.15	7.38	-100.4	117
12:05	—	14.5	0.438	0.13	7.35	-99.4	121
12:10	—	14.7	0.417	0.13	7.40	-102.0	98

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/19/17 - 6/20/17
 Site Name Coldwater Rd
 Location Flint MI
 Project No. 64737
 Personnel CSY / KRS

Weather _____
 Well # B-28
 Evacuation Method Whirl Pump / Peristaltic Pump
 Sampling Method PURGE DR

Well Information:

Depth of Well * 34.00 ft.
 Depth to Water * 5.75 ft.
 Length of Water Column 28.25 ft.
 Volume of Water in Well 4.6 gal.(s)
 3X Volume of Water in Well 13.8 gal.(s)

Water Volume /ft. for:
X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling _____ gal.(s)
 Did well go dry? Yes

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>17:05</u>	initial <u>11.3</u>	initial <u>0.86</u>	initial <u>0.48</u>	initial <u>6.99</u>	initial <u>-60.9</u>	initial <u>346</u>
5 min	<u>17:10</u>	<u>11.9</u>	<u>0.86</u>	<u>0.70</u>	<u>7.07</u>	<u>-76.4</u>	<u>145</u>
10 min	<u>17:15</u>	<u>12.7</u>	<u>0.85</u>	<u>1.71</u>	<u>7.11</u>	<u>-76.6</u>	<u>100</u>
15 min	<u>17:20</u>	<u>11.4</u>	<u>0.84</u>	<u>0.85</u>	<u>7.05</u>	<u>-72.4</u>	<u>584</u>
20 min	<u>17:25</u>	<u>12.7</u>					
25 min							
30 min							
35 min							
40 min	<u>6.90</u>	<u>13.3</u>	<u>0.84</u>	<u>6.28</u>	<u>7.27</u>	<u>64.1</u>	<u>74</u>
45 min	<u>8.03</u>	<u>12.9</u>	<u>0.83</u>	<u>3.71</u>	<u>7.23</u>	<u>64.3</u>	<u>48</u>
50 min							
55 min							
60 min							

6/19/17
 6/20/17
 1218
 1223

"dry" recharge ~ 5 minutes

Water Sample:

1215

Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color light Gray
 Odor None
 Turbidity (> 100 NTU) 346
 Sheen/Free Product None

Color Slightly cloudy
 Odor None
 Turbidity (> 100 NTU) 48
 Sheen/Free Product None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

O'Brien & Gere Engineers, Inc. **Standard Groundwater Sampling Log**

Date: 6/20/17
 Site Name: Coldwater Rd CF
 Location: Flint
 Project No.: _____
 Personnel: KBS, CSY
 Weather: mostly
 Well #: OBG-MW 7
 Evacuation Method: Whisk Pump
 Sampling Method: Purge DM

Well Information:
 Depth of Well * 22.90 ft.
 Depth to Water * 9.00 ft.
 Length of Water Column 13.9 ft.
 Volume of Water in Well 2.26 gal.(s)
 3X Volume of Water in Well 6.79 gal.(s)
 Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
 4" Diameter Well = 0.653 X LWC
 6" Diameter Well = 1.469 X LWC
 Volume removed before sampling _____ gal.(s)
 Did well go dry? yes
 * Measurements taken from Well Casing Protective Casing _____ (Other, Specify)

Instrument Calibration: _____ Calibrated within range
 pH yes
 ORP yes
 Conductivity yes
 DO yes

Water parameters:

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>11.20</u>	initial <u>10.1</u>	initial <u>1.01</u>	initial <u>1.68</u>	initial <u>6.89</u>	initial <u>80.5</u>	initial <u>238</u>
5 min	<u>13.75</u>	<u>10.9</u>	<u>0.99</u>	<u>2.11</u>	<u>6.95</u>	<u>47.6</u>	<u>39</u>
10 min	<u>16.27</u>	<u>10.3</u>	<u>0.99</u>	<u>0.22</u>	<u>6.94</u>	<u>19.1</u>	<u>24</u>
15 min	<u>17.02</u>	<u>10.1</u>	<u>1.00</u>	<u>0.16</u>	<u>6.95</u>	<u>-0.9</u>	
20 min	<u>17.52</u>	<u>10.1</u>	<u>1.00</u>	<u>0.41</u>	<u>6.96</u>	<u>-9.8</u>	
25 min	<u>18.00</u>	<u>10.1</u>	<u>1.00</u>	<u>0.42</u>	<u>6.97</u>	<u>-16.6</u>	
30 min	<u>18.55</u>	<u>10.1</u>	<u>1.00</u>	<u>0.86</u>	<u>6.97</u>	<u>-20.4</u>	
35 min	<u>19.40</u>	<u>10.1</u>	<u>1.00</u>	<u>1.93</u>	<u>6.99</u>	<u>-23.1</u>	<u>160</u>
40 min							
45 min							
50 min							
55 min							
60 min							

Water Sample: 1005
 Time Collected _____
 Physical Appearance at Start _____ Physical Appearance at Sampling _____
 Color: rust color Color: clear
 Odor: NONE Odor: NONE
 Turbidity (> 100 NTU): _____ Turbidity (> 100 NTU): _____
 Sheen/Free Product: NONE Sheen/Free Product: NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:
cake purged 3 well volumes
1800 ml/per min 20 gallons

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/19/17
 Site Name Coldwater Rd
 Location Flint, MI
 Project No. _____
 Personnel _____

Weather _____
 Well # DBG-MW-9 (CWTP well)
 Evacuation Method Whale Pump / Peristaltic Pump
 Sampling Method PURGE DRY

Well Information:

Depth of Well * 18.15 ft.
 Depth to Water * 5.21 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ gal.(s)
 3X Volume of Water in Well _____ gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 8 gal.(s)
 Did well go dry? yes

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within range

pH yes
 ORP yes
 Conductivity yes
 DO yes

Water parameters:

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±0.005 (mS/cm)	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>15:45</u>	initial <u>18.3</u>	initial <u>3.43</u>	initial <u>11.43</u>	initial <u>7.02</u>	initial <u>-25.8</u>	initial <u>331</u>
5 min	<u>15:50</u>	<u>9.15</u> , <u>13.8</u>	<u>2.63</u>	<u>0.99</u>	<u>7.09</u>	<u>-67.9</u>	<u>273</u>
10 min	<u>15:55</u>	<u>12.1</u> , <u>15.0</u>	<u>2.55</u>	<u>0.39</u>	<u>7.22</u>	<u>-103.1</u>	<u>135</u>
15 min	<u>16:00</u>	<u>15.45</u> , <u>12.7</u>	<u>2.97</u>	<u>0.27</u>	<u>7.01</u>	<u>-85.6</u>	<u>34</u>
20 min	<u>16:08</u>	<u>dry</u>	<u>1800</u>				
25 min		<u>allow to recharge</u>					
30 min	<u>16:15</u>	<u>DTW</u>	<u>14.9</u>	<u>purged dry to 18:00</u>			
35 min				<u>purged ~ 8 gallons</u>			
40 min							
45 min							
50 min							
55 min	<u>5.09</u>	<u>15.3</u>	<u>3.90</u>	<u>3.23</u>	<u>6.95</u>	<u>8.9</u>	
60 min	<u>6.35</u>	<u>14.4</u>	<u>2.88</u>	<u>3.60</u>	<u>7.12</u>	<u>33.0</u>	<u>60</u>

6/20/17
1150
1155

Water Sample:

Time Collected 1155

Physical Appearance at Start

Physical Appearance at Sampling

Color _____
 Odor _____
 Turbidity (> 100 NTU) _____
 Sheen/Free Product _____

Color _____
 Odor _____
 Turbidity (> 100 NTU) _____
 Sheen/Free Product _____

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	2	40 ml Glass	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

SUBJECT: coldwater semiannual vaults & sumps	PAGE:	BY: LBS	DATE: 6/9/17	JOB NUMBER:
--	-------	---------	--------------	-------------

	DTW	Temp	PH	Cond.	Time	Color
Sump A	20.95	12.9	9.43	1.67	10:40	clear
Vault A	—	11.4	6.90	1.40	12:10	clear
Sump B	13.45	13.9	8.10	2.25	13:00	clear yellow
Vault B	—	11.6	6.80	1.07	13:53	clear
Sump C	— 17.10	13.3	8.06	4.66	14:15	clear yellow
Vault C	—	12.2	6.88	1.76	14:45	clear
Sump D	— 18.78	13.9	10.75	5.56	15:15	clear yellow
Vault D	—	16.7	6.83	1.65	15:40	clear
Sump E	DUP-1 20.51	20.1	8.02	0.003	16:25	clear yellow
Vault E	DUP-2 (DUP-1 PFC)	11.9	6.79	1.37	16:50	clear
Sump F	19.32	13.2	8.51	3.59	17:15	clear
Vault F	—	11.8	6.89	1.62	17:40	clear

ATTACHMENT C
*Analytical Laboratory
Results*

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-29302-1
Client Project/Site: PFC Analysis

For:
O'Brien & Gere Inc of North America
37000 Grand River Ave
Suite 260
Farmington Hills, Michigan 48335

Attn: Mr. Clifford Yantz



Authorized for release by:
7/31/2017 5:44:47 PM

Jill Kellmann, Manager of Project Management
(916)374-4402
jill.kellmann@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
Cl	The peak identified by the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
*	LCS or LCSD is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Job ID: 320-29302-1

Laboratory: TestAmerica Sacramento

Narrative

Receipt

The samples were received on 6/21/2017 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.0° C.

LCMS

Method(s) 537 (modified): Due to the sporadic recovery performance for the labeled analyte 13C8-FOSA, we are temporarily increasing the reporting limit (RL) for the target analyte FOSA in order to provide better confidence in its reported value. The RL for FOSA has been increased to the same concentration as that fortified into the laboratory control sample (LCS). At this concentration, the LCS demonstrates acceptable FOSA recovery regardless of the recovery of its labeled analog, 13C8-FOSA, which is used to quantitate FOSA. Thus, indicating sufficient analytical performance to support this RL increase. Techniques to improve the recovery performance of 13C8-FOSA are currently underway.

SUMP A (320-29302-1), Vault A (320-29302-2), SUMP B (320-29302-3), Vault B (320-29302-4), SUMP C (320-29302-5), Vault C (320-29302-6), SUMP E (320-29302-7), Vault E (320-29302-8), SUMP F (320-29302-9), Vault F (320-29302-10), Vault F (320-29302-10[MSJ]), Vault F (320-29302-10[MSD]), DUP-1 (320-29302-11), Vault D (320-29302-12), FB-01 (320-29302-13), EB-01 (320-29302-14), OBG-MW-7 (320-29302-15), B-24r (320-29302-16), OBG-MW-9 (320-29302-17), B-28 (320-29302-18), B-27D (320-29302-19), B-18A (320-29302-20), B-9 (320-29302-21), (LCS 320-172064/2-A), (LCS 320-172104/2-A), (LCS 320-175097/2-A), (LCS 320-175739/2-A), (LCSD 320-172104/3-A), (LCSD 320-175097/3-A), (LCSD 320-175739/3-A), (MB 320-172064/1-A), (MB 320-172104/1-A), (MB 320-175097/1-A), (MB 320-175739/1-A), (320-29297-A-3-A), (320-29297-A-3-B MS) and (320-29297-A-3-C MSD)

Method(s) 537 (modified): The laboratory control sample duplicate (LCSD) for preparation batch 320-172104 and analytical batch 320-173630 recovered outside control limits for the following analytes: Perfluorotetradecanoic acid (PFTeA). These analytes were biased high in the LCSD and were detected below the reporting limit in the associated samples; therefore, the data have been reported. EB-01 (320-29302-14), OBG-MW-7 (320-29302-15), B-24r (320-29302-16), OBG-MW-9 (320-29302-17), B-28 (320-29302-18), B-27D (320-29302-19), B-18A (320-29302-20), B-9 (320-29302-21), (LCSD 320-172104/3-A), (320-29297-A-3-A), (320-29297-A-3-B MS) and (320-29297-A-3-C MSD)

Method(s) 537 (modified): The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 320-175097 and analytical batch 320-175529 recovered outside control limits for the following analyte: Perfluorotetradecanoic acid (PFTeA). This analyte was biased high in the LCS/LCSD and was detected below the reporting limit in the associated samples; therefore, the data have been reported.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for 13C2 PFDa in the following sample: EB-01 (320-29302-14). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C8 FOSA: OBG-MW-7 (320-29302-15), B-24r (320-29302-16), OBG-MW-9 (320-29302-17), B-28 (320-29302-18), B-27D (320-29302-19), B-18A (320-29302-20), (320-29297-A-3-A), (320-29297-A-3-B MS) and (320-29297-A-3-C MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C8 FOSA: SUMP A (320-29302-1), Vault A (320-29302-2), Vault B (320-29302-4), (LCS 320-172064/2-A), 13C8 FOSA: Vault C (320-29302-6), DUP-1 (320-29302-11), FB-01 (320-29302-13), Vault E (320-29302-8), Vault F (320-29302-10), Vault F (320-29302-10[MSJ]), Vault F (320-29302-10[MSD]) and (LCS 320-175097/2-A). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C2 PFDa: Vault F (320-29302-10[MSJ]). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recoveries associated with the following samples are below the method recommended limit for several analytes: SUMP B (320-29302-3), SUMP C (320-29302-5) and SUMP F (320-29302-9). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Case Narrative

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Job ID: 320-29302-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C8 FOSA, 13C4 PFBA, and 13C5 PFPeA: SUMP E (320-29302-7). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C8 FOSA and 13C4 PFBA: Vault D (320-29302-12). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is far below the method recommended limit for 13C8 FOSA: Vault E (320-29302-8), Vault F (320-29302-10), Vault F (320-29302-10[MSJ]), Vault F (320-29302-10[MSD]) and B-9 (320-29302-21). These samples were re-extracted outside of holding time with improved IDA recoveries. Both sets of data were reported.

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Perfluorotetradecanoic acid (PFTeA) in preparation batches 320-172104 and 320-172064 and analytical batches 320-173630 and 320-174098 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): The following sample has chromatographic interferences that could adversely impact the identification and quantitation of target analytes: Perfluorobutanesulfonic acid (PFBS) SUMP A (320-29302-1). These interferences could cause false positive results.

Method(s) 537 (modified): The following sample has chromatographic interferences that could adversely impact the identification and quantitation of target analyte: Perfluoropentanoic acid (PFPeA) SUMP C (320-29302-5). These interferences could cause false positive results.

Method(s) 537 (modified): The following sample has chromatographic interferences that could adversely impact the identification and quantitation of target analyte: Perfluorononanoic acid (PFNA) SUMP B (320-29302-3). These interferences could cause false positive results.

Method(s) 537 (Modified): The following samples were diluted to bring the concentration of target analytes within the calibration range: SUMP A (320-29302-1), Vault A (320-29302-2), SUMP B (320-29302-3), SUMP C (320-29302-5), Vault C (320-29302-6), SUMP E (320-29302-7), Vault E (320-29302-8), SUMP F (320-29302-9) and DUP-1 (320-29302-11). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 3535: The following samples: SUMP A (320-29302-1), SUMP B (320-29302-3), Vault C (320-29302-6) and SUMP E (320-29302-7) were decanted prior to preparation due to excess sediment.

Method(s) 3535: The following samples: OBG-MW-7 (320-29302-15), B-24r (320-29302-16), OBG-MW-9 (320-29302-17), B-28 (320-29302-18), B-27D (320-29302-19), B-18A (320-29302-20) and B-9 (320-29302-21) were decanted prior to preparation due to excessive amounts of sediment.

Method(s) 3535: A murky white layer was observed at the bottom of centrifuge tube for the following samples. OBG-MW-7 (320-29302-15), B-24r (320-29302-16), B-28 (320-29302-18), B-18A (320-29302-20) and B-9 (320-29302-21)

Method(s) 3535: A deviation from the Standard Operating Procedure (SOP) occurred. The following batch 172064 was inadvertently prepped with 21 field samples.

Method(s) 3535: A deviation from the Standard Operating Procedure (SOP) occurred. All samples including the batch QC was accidentally dried for 50 minutes instead of 15 minutes.

Method(s) 3535: The following samples were re-prepared outside of preparation holding time due to low FOSA recoveries. Vault B (320-29302-4), Vault E (320-29302-8), Vault F (320-29302-10), Vault F (320-29302-10[MSJ]) and Vault F (320-29302-10[MSD]).

Case Narrative

Client: O'Brien & Gere Inc of North America
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TestAmerica Job ID: 320-29302-1

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Laboratory: TestAmerica Sacramento (Continued)

Method(s) 3535: The following samples turned a white color after concentrating down to final volume and after adding the 400 uL of methanol. Vault B (320-29302-4), Vault E (320-29302-8), Vault F (320-29302-10), Vault F (320-29302-10[MS]) and Vault F (320-29302-10[MSD])

Method(s) 3535: Approximately 250mL of the aqueous portion of the following samples were decanted into a new polyethylene bottle prior to extraction due to an excessive amount of sediment in the sample bottles. The excessive sediment had the potential to clog the solid-phase column: B-9 (320-29302-21)

Method(s) 3535: The following sample was re-prepared outside of preparation holding time due to low FOSA recoveries: B-9 (320-29302-21).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP A

Lab Sample ID: 320-29302-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	260		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	110		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	54		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	310	CI	1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	150		1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	4.3		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	8.1	J B	39	0.62	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA) - DL	220	B	97	22	ng/L	50		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	410		97	42	ng/L	50		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	13000		97	62	ng/L	50		537 (modified)	Total/NA

Client Sample ID: Vault A

Lab Sample ID: 320-29302-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	18	B	1.9	0.45	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.9		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.9		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.4		1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	16		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	9.3		1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	32		1.9	0.85	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	7.2		1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	450		9.7	6.2	ng/L	5		537 (modified)	Total/NA

Client Sample ID: SUMP B

Lab Sample ID: 320-29302-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	17		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	230		2.0	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	29	CI	2.0	0.64	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.37	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	140		2.0	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	2.6		2.0	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	6.1	J B	39	0.63	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA) - DL	480	B	200	45	ng/L	100		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	410		200	97	ng/L	100		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	280		200	77	ng/L	100		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	190	J	200	90	ng/L	100		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	650		200	85	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	9600		200	130	ng/L	100		537 (modified)	Total/NA

Client Sample ID: Vault B

Lab Sample ID: 320-29302-4

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault B (Continued)

Lab Sample ID: 320-29302-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.6	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.79	J	2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.1		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.1		2.0	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	12		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.4		2.0	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	150		2.0	1.3	ng/L	1		537 (modified)	Total/NA

Client Sample ID: SUMP C

Lab Sample ID: 320-29302-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	80		1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	230		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	18		1.9	0.64	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	200		1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	1.9		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	8.2	J B	39	0.62	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA) - DL	490	B	190	45	ng/L	100		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	1100	CI	190	96	ng/L	100		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	390		190	76	ng/L	100		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	410		190	89	ng/L	100		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	1200		190	85	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	12000		190	120	ng/L	100		537 (modified)	Total/NA

Client Sample ID: Vault C

Lab Sample ID: 320-29302-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	19	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.0		1.9	0.75	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.3		1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.21	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12		1.9	0.88	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	24		1.9	0.83	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	5.8		1.9	0.68	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	2.0	J B	38	0.61	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	440		9.5	6.1	ng/L	5		537 (modified)	Total/NA

Client Sample ID: SUMP E

Lab Sample ID: 320-29302-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	48	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	86		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	65		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	77		1.9	0.78	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP E (Continued)

Lab Sample ID: 320-29302-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	95		1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	21		1.9	0.63	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	1.6	J	1.9	0.43	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.7	J	1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.21	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	57		1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	170		1.9	0.84	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	55		1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	1.2	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	4.7	J B	39	0.62	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	3400		39	25	ng/L	20		537 (modified)	Total/NA

Client Sample ID: Vault E

Lab Sample ID: 320-29302-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.6	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.5		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.5		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.5		1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	24		1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	13		1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	65		1.9	0.84	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	15		1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	730		9.7	6.2	ng/L	5		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA) - RE	3.5	J H	40	0.64	ng/L	1		537 (modified)	Total/NA

Client Sample ID: SUMP F

Lab Sample ID: 320-29302-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	260	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	150		2.0	0.77	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	67		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	80		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	9.7		2.0	0.64	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	1.0	J	2.0	0.43	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	82		2.0	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	6.1	J B	39	0.63	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	330		98	49	ng/L	50		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	100		98	45	ng/L	50		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	390		98	43	ng/L	50		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	5400		98	63	ng/L	50		537 (modified)	Total/NA

Client Sample ID: Vault F

Lab Sample ID: 320-29302-10

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault F (Continued)

Lab Sample ID: 320-29302-10

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.8	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	15		1.9	0.94	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	13		1.9	0.75	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	12		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	57		1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.62	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12		1.9	0.88	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	35		1.9	0.83	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	7.3		1.9	0.68	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	300		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	22	J H	39	0.62	ng/L	1		537 (modified)	Total/NA
- RE									

Client Sample ID: DUP-1

Lab Sample ID: 320-29302-11

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.0	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.7		2.0	0.97	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.3		2.0	0.77	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.3		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	25		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.64	J	2.0	0.64	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.43	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12		2.0	0.90	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	63		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	15		2.0	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	16	J B	39	0.63	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	730		9.8	6.3	ng/L	5		537 (modified)	Total/NA

Client Sample ID: Vault D

Lab Sample ID: 320-29302-12

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.3	B	2.0	0.47	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	6.5		2.0	1.0	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.96	J	2.0	0.82	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	9.9		2.0	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.25	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	11		2.0	0.93	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	33		2.0	0.88	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	8.4		2.0	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	350		2.0	1.3	ng/L	1		537 (modified)	Total/NA

Client Sample ID: FB-01

Lab Sample ID: 320-29302-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.92	J B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.4	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: EB-01

Lab Sample ID: 320-29302-14

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.59	J B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.89	J B *	2.0	0.20	ng/L	1		537 (modified)	Total/NA

Client Sample ID: OBG-MW-7

Lab Sample ID: 320-29302-15

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.0	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.0	J	1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	1.0	J B *	1.9	0.19	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-24r

Lab Sample ID: 320-29302-16

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	14	B	1.9	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.9		1.9	0.74	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.7	J	1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.9		1.9	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.7		1.9	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.4		1.9	0.82	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.0		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.66	J	38	0.60	ng/L	1		537 (modified)	Total/NA

Client Sample ID: OBG-MW-9

Lab Sample ID: 320-29302-17

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.4	J B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0		1.9	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.0		1.9	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.9		1.9	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-28

Lab Sample ID: 320-29302-18

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.9	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.92	J	1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.79	J	1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.7	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.2	J	39	0.62	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-27D

Lab Sample ID: 320-29302-19

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.0	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.4	J	1.9	0.72	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-18A

Lab Sample ID: 320-29302-20

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.2	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: B-18A (Continued)

Lab Sample ID: 320-29302-20

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1.2	J	1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.3	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-9

Lab Sample ID: 320-29302-21

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	14	B	1.9	0.45	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.2		1.9	0.96	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	9.3		1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.2		1.9	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	15		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	1.2	J B *	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.3		1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.9		1.9	0.85	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.70	J	1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	13		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	3.3	J H	39	0.62	ng/L	1		537 (modified)	Total/NA
- RE									

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP A

Date Collected: 06/19/17 11:40

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-1

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	260		1.9	0.96	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorohexanoic acid (PFHxA)	110		1.9	0.76	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorooctanoic acid (PFOA)	54		1.9	0.73	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.64	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.54	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.19	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorobutanesulfonic acid (PFBS)	310	CI	1.9	0.89	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	150		1.9	0.69	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorodecanesulfonic acid (PFDS)	4.3		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 07:16	1
Perfluorooctane Sulfonamide (FOSA)	8.1	J B	39	0.62	ng/L		07/01/17 15:26	07/13/17 07:16	1
6:2FTS	ND		19	3.7	ng/L		07/01/17 15:26	07/13/17 07:16	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	13	*	25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C2 PFHxA	19	*	25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C4 PFOA	24	*	25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C5 PFNA	28		25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C2 PFDA	51		25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C2 PFUnA	56		25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C2 PFDoA	53		25 - 150				07/01/17 15:26	07/13/17 07:16	1
18O2 PFHxS	53		25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C4 PFOS	43		25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C4-PFHpA	24	*	25 - 150				07/01/17 15:26	07/13/17 07:16	1
13C5 PFPeA	16	*	25 - 150				07/01/17 15:26	07/13/17 07:16	1
M2-6:2FTS	37		25 - 150				07/01/17 15:26	07/13/17 07:16	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	220	B	97	22	ng/L		07/01/17 15:26	07/17/17 12:15	50
Perfluorohexanesulfonic acid (PFHxS)	410		97	42	ng/L		07/01/17 15:26	07/17/17 12:15	50
Perfluorooctanesulfonic acid (PFOS)	13000		97	62	ng/L		07/01/17 15:26	07/17/17 12:15	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	47		25 - 150				07/01/17 15:26	07/17/17 12:15	50
18O2 PFHxS	83		25 - 150				07/01/17 15:26	07/17/17 12:15	50
13C4 PFOS	91		25 - 150				07/01/17 15:26	07/17/17 12:15	50

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault A

Date Collected: 06/19/17 12:10

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-2

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	18	B	1.9	0.45	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluoropentanoic acid (PFPeA)	1.9		1.9	0.96	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorohexanoic acid (PFHxA)	4.9		1.9	0.76	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluoroheptanoic acid (PFHpA)	4.4		1.9	0.78	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorooctanoic acid (PFOA)	16		1.9	0.73	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.64	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.54	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.19	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorobutanesulfonic acid (PFBS)	9.3		1.9	0.89	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorohexanesulfonic acid (PFHxS)	32		1.9	0.85	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.2		1.9	0.69	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
Perfluorooctane Sulfonamide (FOSA)	ND		39	0.62	ng/L	-	07/01/17 15:26	07/13/17 07:23	1
6:2FTS	ND		19	3.7	ng/L	-	07/01/17 15:26	07/13/17 07:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C4 PFBA	31		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C2 PFHxA	58		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C4 PFOA	66		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C5 PFNA	68		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C2 PFDA	67		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C2 PFUnA	42		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C2 PFDoA	34		25 - 150	07/01/17 15:26	07/13/17 07:23	1
18O2 PFHxS	89		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C4 PFOS	92		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C4-PFHpA	72		25 - 150	07/01/17 15:26	07/13/17 07:23	1
13C5 PFPeA	51		25 - 150	07/01/17 15:26	07/13/17 07:23	1
M2-6:2FTS	68		25 - 150	07/01/17 15:26	07/13/17 07:23	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	450		9.7	6.2	ng/L	-	07/01/17 15:26	07/17/17 12:43	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	108		25 - 150	07/01/17 15:26	07/17/17 12:43	5

Client Sample ID: SUMP B

Date Collected: 06/19/17 13:00

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-3

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	17		2.0	0.79	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorooctanoic acid (PFOA)	230		2.0	0.73	ng/L	-	07/01/17 15:26	07/13/17 07:37	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP B

Lab Sample ID: 320-29302-3

Date Collected: 06/19/17 13:00

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	29	CI	2.0	0.64	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.73	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorotetradecanoic acid (PFTeA)	0.37	J B	2.0	0.20	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	140		2.0	0.70	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorodecanesulfonic acid (PFDS)	2.6		2.0	1.2	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
Perfluorooctane Sulfonamide (FOSA)	6.1	J B	39	0.63	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
6:2FTS	ND		20	3.7	ng/L	-	07/01/17 15:26	07/13/17 07:37	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 FOSA	10	*	25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C4 PFBA	3	*	25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C2 PFHxA	8	*	25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C4 PFOA	19	*	25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C5 PFNA	27		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C2 PFDA	43		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C2 PFUnA	50		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C2 PFDoA	48		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
18O2 PFHxS	44		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C4 PFOS	40		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C4-PFHpA	14	*	25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
13C5 PFPeA	9	*	25 - 150			-	07/01/17 15:26	07/13/17 07:37	1
M2-6:2FTS	43		25 - 150			-	07/01/17 15:26	07/13/17 07:37	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	480	B	200	45	ng/L	-	07/01/17 15:26	07/17/17 12:01	100
Perfluoropentanoic acid (PFPeA)	410		200	97	ng/L	-	07/01/17 15:26	07/17/17 12:01	100
Perfluorohexanoic acid (PFHxA)	280		200	77	ng/L	-	07/01/17 15:26	07/17/17 12:01	100
Perfluorobutanesulfonic acid (PFBS)	190	J	200	90	ng/L	-	07/01/17 15:26	07/17/17 12:01	100
Perfluorohexanesulfonic acid (PFHxS)	650		200	85	ng/L	-	07/01/17 15:26	07/17/17 12:01	100
Perfluorooctanesulfonic acid (PFOS)	9600		200	130	ng/L	-	07/01/17 15:26	07/17/17 12:01	100
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFBA	58		25 - 150			-	07/01/17 15:26	07/17/17 12:01	100
13C2 PFHxA	72		25 - 150			-	07/01/17 15:26	07/17/17 12:01	100
18O2 PFHxS	93		25 - 150			-	07/01/17 15:26	07/17/17 12:01	100
13C4 PFOS	102		25 - 150			-	07/01/17 15:26	07/17/17 12:01	100
13C5 PFPeA	78		25 - 150			-	07/01/17 15:26	07/17/17 12:01	100

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault B

Date Collected: 06/19/17 13:55

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-4

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.6	B	2.0	0.45	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorohexanoic acid (PFHxA)	0.79	J	2.0	0.78	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorooctanoic acid (PFOA)	4.1		2.0	0.74	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.20	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorobutanesulfonic acid (PFBS)	4.1		2.0	0.91	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorohexanesulfonic acid (PFHxS)	12		2.0	0.86	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.4		2.0	0.71	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorooctanesulfonic acid (PFOS)	150		2.0	1.3	ng/L		07/01/17 15:26	07/17/17 16:05	1
Perfluorooctane Sulfonamide (FOSA)	ND		40	0.63	ng/L		07/01/17 15:26	07/17/17 16:05	1
6:2FTS	ND		20	3.8	ng/L		07/01/17 15:26	07/17/17 16:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	0.8	*	25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C4 PFBA	49		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C2 PFHxA	80		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C4 PFOA	96		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C5 PFNA	85		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C2 PFDA	80		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C2 PFUnA	63		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C2 PFDoA	57		25 - 150	07/01/17 15:26	07/17/17 16:05	1
18O2 PFHxS	94		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C4 PFOS	99		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C4-PFHpA	100		25 - 150	07/01/17 15:26	07/17/17 16:05	1
13C5 PFPeA	75		25 - 150	07/01/17 15:26	07/17/17 16:05	1
M2-6:2FTS	92		25 - 150	07/01/17 15:26	07/17/17 16:05	1

Client Sample ID: SUMP C

Date Collected: 06/19/17 14:15

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-5

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	80		1.9	0.78	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorooctanoic acid (PFOA)	230		1.9	0.73	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorononanoic acid (PFNA)	18		1.9	0.64	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.54	ng/L		07/01/17 15:26	07/13/17 07:51	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP C

Lab Sample ID: 320-29302-5

Date Collected: 06/19/17 14:15

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.19	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluoroheptanesulfonic Acid (PFHpS)	200		1.9	0.69	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorodecanesulfonic acid (PFDS)	1.9		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 07:51	1
Perfluorooctane Sulfonamide (FOSA)	8.2	J B	39	0.62	ng/L		07/01/17 15:26	07/13/17 07:51	1
6:2FTS	ND		19	3.7	ng/L		07/01/17 15:26	07/13/17 07:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	8	*	25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C4 PFOA	16	*	25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C5 PFNA	24	*	25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C2 PFDA	38		25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C2 PFUnA	44		25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C2 PFDoA	46		25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C4 PFOS	36		25 - 150				07/01/17 15:26	07/13/17 07:51	1
13C4-PFHpA	14	*	25 - 150				07/01/17 15:26	07/13/17 07:51	1
M2-6:2FTS	34		25 - 150				07/01/17 15:26	07/13/17 07:51	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	490	B	190	45	ng/L		07/01/17 15:26	07/17/17 12:08	100
Perfluoropentanoic acid (PFPeA)	1100	CI	190	96	ng/L		07/01/17 15:26	07/17/17 12:08	100
Perfluorohexanoic acid (PFHxA)	390		190	76	ng/L		07/01/17 15:26	07/17/17 12:08	100
Perfluorobutanesulfonic acid (PFBS)	410		190	89	ng/L		07/01/17 15:26	07/17/17 12:08	100
Perfluorohexanesulfonic acid (PFHxS)	1200		190	85	ng/L		07/01/17 15:26	07/17/17 12:08	100
Perfluorooctanesulfonic acid (PFOS)	12000		190	120	ng/L		07/01/17 15:26	07/17/17 12:08	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	45		25 - 150				07/01/17 15:26	07/17/17 12:08	100
13C2 PFHxA	75		25 - 150				07/01/17 15:26	07/17/17 12:08	100
18O2 PFHxS	85		25 - 150				07/01/17 15:26	07/17/17 12:08	100
13C4 PFOS	98		25 - 150				07/01/17 15:26	07/17/17 12:08	100
13C5 PFPeA	77		25 - 150				07/01/17 15:26	07/17/17 12:08	100

Client Sample ID: Vault C

Lab Sample ID: 320-29302-6

Date Collected: 06/19/17 14:45

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	19	B	1.9	0.44	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.94	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorohexanoic acid (PFHxA)	6.0		1.9	0.75	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluoroheptanoic acid (PFHpA)	3.3		1.9	0.77	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorooctanoic acid (PFOA)	12		1.9	0.71	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		07/01/17 15:26	07/13/17 07:58	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault C

Date Collected: 06/19/17 14:45

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-6

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorotridecanoic Acid (PFTrIA)	ND		1.9	0.53	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorotetradecanoic acid (PFTeA)	0.21	J B	1.9	0.19	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorobutanesulfonic acid (PFBS)	12		1.9	0.88	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorohexanesulfonic acid (PFHxS)	24		1.9	0.83	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluoroheptanesulfonic Acid (PFHpS)	5.8		1.9	0.68	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 07:58	1
Perfluorooctane Sulfonamide (FOSA)	2.0	J B	38	0.61	ng/L		07/01/17 15:26	07/13/17 07:58	1
6:2FTS	ND		19	3.6	ng/L		07/01/17 15:26	07/13/17 07:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	20	*	25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C4 PFBA	28		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C2 PFHxA	66		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C4 PFOA	89		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C5 PFNA	84		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C2 PFDA	94		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C2 PFUnA	91		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C2 PFDoA	89		25 - 150				07/01/17 15:26	07/13/17 07:58	1
18O2 PFHxS	99		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C4 PFOS	116		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C4-PFHpA	84		25 - 150				07/01/17 15:26	07/13/17 07:58	1
13C5 PFPeA	56		25 - 150				07/01/17 15:26	07/13/17 07:58	1
M2-6:2FTS	94		25 - 150				07/01/17 15:26	07/13/17 07:58	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	440		9.5	6.1	ng/L		07/01/17 15:26	07/17/17 12:49	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOS	111		25 - 150				07/01/17 15:26	07/17/17 12:49	5

Client Sample ID: SUMP E

Date Collected: 06/19/17 16:25

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-7

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	48	B	1.9	0.44	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluoropentanoic acid (PFPeA)	86		1.9	0.96	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorohexanoic acid (PFHxA)	65		1.9	0.76	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluoroheptanoic acid (PFHpA)	77		1.9	0.78	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorooctanoic acid (PFOA)	95		1.9	0.72	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorononanoic acid (PFNA)	21		1.9	0.63	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorodecanoic acid (PFDA)	1.6	J	1.9	0.43	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluoroundecanoic acid (PFUnA)	1.7	J	1.9	0.72	ng/L		07/01/17 15:26	07/13/17 08:05	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP E

Lab Sample ID: 320-29302-7

Date Collected: 06/19/17 16:25

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorotetradecanoic acid (PFTeA)	0.21	J B	1.9	0.19	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorobutanesulfonic acid (PFBS)	57		1.9	0.89	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorohexanesulfonic acid (PFHxS)	170		1.9	0.84	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluoroheptanesulfonic Acid (PFHpS)	55		1.9	0.69	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorodecanesulfonic acid (PFDS)	1.2	J	1.9	1.2	ng/L		07/01/17 15:26	07/13/17 08:05	1
Perfluorooctane Sulfonamide (FOSA)	4.7	J B	39	0.62	ng/L		07/01/17 15:26	07/13/17 08:05	1
6:2FTS	ND		19	3.7	ng/L		07/01/17 15:26	07/13/17 08:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	4	*	25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C4 PFBA	11	*	25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C2 PFHxA	33		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C4 PFOA	45		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C5 PFNA	50		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C2 PFDA	66		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C2 PFUnA	68		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C2 PFDoA	54		25 - 150	07/01/17 15:26	07/13/17 08:05	1
18O2 PFHxS	68		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C4 PFOS	58		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C4-PFHpA	43		25 - 150	07/01/17 15:26	07/13/17 08:05	1
13C5 PFPeA	23	*	25 - 150	07/01/17 15:26	07/13/17 08:05	1
M2-6:2FTS	54		25 - 150	07/01/17 15:26	07/13/17 08:05	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	3400		39	25	ng/L		07/01/17 15:26	07/17/17 12:29	20

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	106		25 - 150	07/01/17 15:26	07/17/17 12:29	20

Client Sample ID: Vault E

Lab Sample ID: 320-29302-8

Date Collected: 06/19/17 16:50

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.6	B	1.9	0.44	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluoropentanoic acid (PFPeA)	5.5		1.9	0.96	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorohexanoic acid (PFHxA)	6.5		1.9	0.76	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluoroheptanoic acid (PFHpA)	5.5		1.9	0.78	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorooctanoic acid (PFOA)	24		1.9	0.72	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		07/01/17 15:26	07/13/17 08:12	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault E

Date Collected: 06/19/17 16:50

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-8

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.19	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorobutanesulfonic acid (PFBS)	13		1.9	0.89	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorohexanesulfonic acid (PFHxS)	65		1.9	0.84	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	15		1.9	0.69	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 08:12	1
Perfluorooctane Sulfonamide (FOSA)	ND		39	0.62	ng/L		07/01/17 15:26	07/13/17 08:12	1
6:2FTS	ND		19	3.7	ng/L		07/01/17 15:26	07/13/17 08:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	0.5	*	25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C4 PFBA	46		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C2 PFHxA	78		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C4 PFOA	71		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C5 PFNA	65		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C2 PFDA	82		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C2 PFUnA	62		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C2 PFDoA	57		25 - 150	07/01/17 15:26	07/13/17 08:12	1
18O2 PFHxS	105		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C4 PFOS	107		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C4-PFHpA	89		25 - 150	07/01/17 15:26	07/13/17 08:12	1
13C5 PFPeA	70		25 - 150	07/01/17 15:26	07/13/17 08:12	1
M2-6:2FTS	75		25 - 150	07/01/17 15:26	07/13/17 08:12	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	730		9.7	6.2	ng/L		07/01/17 15:26	07/17/17 14:28	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	104		25 - 150	07/01/17 15:26	07/17/17 14:28	5

Method: 537 (modified) - Perfluorinated Hydrocarbons - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	3.5	J H	40	0.64	ng/L		07/20/17 10:13	07/23/17 16:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150	07/20/17 10:13	07/23/17 16:44	1

Client Sample ID: SUMP F

Date Collected: 06/19/17 17:15

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-9

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	260	B	2.0	0.45	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorohexanoic acid (PFHxA)	150		2.0	0.77	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluoroheptanoic acid (PFHpA)	67		2.0	0.79	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorooctanoic acid (PFOA)	80		2.0	0.74	ng/L		07/01/17 15:26	07/13/17 08:19	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP F

Lab Sample ID: 320-29302-9

Date Collected: 06/19/17 17:15

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	9.7		2.0	0.64	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorodecanoic acid (PFDA)	1.0	J	2.0	0.43	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.20	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluoroheptanesulfonic Acid (PFHps)	82		2.0	0.70	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/01/17 15:26	07/13/17 08:19	1
Perfluorooctane Sulfonamide (FOSA)	6.1	J B	39	0.63	ng/L		07/01/17 15:26	07/13/17 08:19	1
6:2FTS	ND		20	3.8	ng/L		07/01/17 15:26	07/13/17 08:19	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	4	*	25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C4 PFBA	4	*	25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C2 PFHxA	15	*	25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C4 PFOA	29		25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C5 PFNA	39		25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C2 PFDA	55		25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C2 PFUnA	66		25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C2 PFDoA	59		25 - 150				07/01/17 15:26	07/13/17 08:19	1
18O2 PFHxS	52		25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C4 PFOS	50		25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C4-PFHpA	23	*	25 - 150				07/01/17 15:26	07/13/17 08:19	1
13C5 PFPeA	11	*	25 - 150				07/01/17 15:26	07/13/17 08:19	1
M2-6:2FTS	44		25 - 150				07/01/17 15:26	07/13/17 08:19	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	330		98	49	ng/L		07/01/17 15:26	07/17/17 12:22	50
Perfluorobutanesulfonic acid (PFBS)	100		98	45	ng/L		07/01/17 15:26	07/17/17 12:22	50
Perfluorohexanesulfonic acid (PFHxS)	390		98	43	ng/L		07/01/17 15:26	07/17/17 12:22	50
Perfluorooctanesulfonic acid (PFOS)	5400		98	63	ng/L		07/01/17 15:26	07/17/17 12:22	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	92		25 - 150				07/01/17 15:26	07/17/17 12:22	50
13C4 PFOS	106		25 - 150				07/01/17 15:26	07/17/17 12:22	50
13C5 PFPeA	80		25 - 150				07/01/17 15:26	07/17/17 12:22	50

Client Sample ID: Vault F

Lab Sample ID: 320-29302-10

Date Collected: 06/19/17 17:40

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	6.8	B	1.9	0.44	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluoropentanoic acid (PFPeA)	15		1.9	0.94	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorohexanoic acid (PFHxA)	13		1.9	0.75	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluoroheptanoic acid (PFHpA)	12		1.9	0.76	ng/L		07/01/17 15:26	07/13/17 08:25	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault F

Date Collected: 06/19/17 17:40

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-10

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	57		1.9	0.71	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.62	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorotetradecanoic acid (PFTeA)	ND	F1	1.9	0.19	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorobutanesulfonic acid (PFBS)	12		1.9	0.88	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorohexanesulfonic acid (PFHxS)	35		1.9	0.83	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.3		1.9	0.68	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorooctanesulfonic acid (PFOS)	300		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 08:25	1
Perfluorooctane Sulfonamide (FOSA)	ND		38	0.61	ng/L		07/01/17 15:26	07/13/17 08:25	1
6:2FTS	ND		19	3.6	ng/L		07/01/17 15:26	07/13/17 08:25	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	0.5	*	25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C4 PFBA	52		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C2 PFHxA	96		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C4 PFOA	111		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C5 PFNA	91		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C2 PFDA	96		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C2 PFUnA	75		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C2 PFDoA	63		25 - 150				07/01/17 15:26	07/13/17 08:25	1
18O2 PFHxS	127		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C4 PFOS	127		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C4-PFHpA	114		25 - 150				07/01/17 15:26	07/13/17 08:25	1
13C5 PFPeA	87		25 - 150				07/01/17 15:26	07/13/17 08:25	1
M2-6:2FTS	113		25 - 150				07/01/17 15:26	07/13/17 08:25	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - RE

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	22	J H	39	0.62	ng/L		07/20/17 10:13	07/23/17 16:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150				07/20/17 10:13	07/23/17 16:57	1

Client Sample ID: DUP-1

Date Collected: 06/19/17 00:00

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-11

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.0	B	2.0	0.45	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluoropentanoic acid (PFPeA)	4.7		2.0	0.97	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorohexanoic acid (PFHxA)	6.3		2.0	0.77	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluoroheptanoic acid (PFHpA)	5.3		2.0	0.79	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorooctanoic acid (PFOA)	25		2.0	0.74	ng/L		07/01/17 15:26	07/13/17 08:53	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: DUP-1
Date Collected: 06/19/17 00:00
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-11
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	0.64	J	2.0	0.64	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorotetradecanoic acid (PFTeA)	0.43	J B	2.0	0.20	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorobutanesulfonic acid (PFBS)	12		2.0	0.90	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorohexanesulfonic acid (PFHxS)	63		2.0	0.86	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	15		2.0	0.70	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/01/17 15:26	07/13/17 08:53	1
Perfluorooctane Sulfonamide (FOSA)	16	J B	39	0.63	ng/L		07/01/17 15:26	07/13/17 08:53	1
6:2FTS	ND		20	3.8	ng/L		07/01/17 15:26	07/13/17 08:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C4 PFBA	53		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C2 PFHxA	88		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C4 PFOA	87		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C5 PFNA	88		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C2 PFDA	103		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C2 PFUnA	77		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C2 PFDoA	67		25 - 150				07/01/17 15:26	07/13/17 08:53	1
18O2 PFHxS	117		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C4 PFOS	116		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C4-PFHpA	107		25 - 150				07/01/17 15:26	07/13/17 08:53	1
13C5 PFPeA	82		25 - 150				07/01/17 15:26	07/13/17 08:53	1
M2-6:2FTS	78		25 - 150				07/01/17 15:26	07/13/17 08:53	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	730		9.8	6.3	ng/L		07/01/17 15:26	07/17/17 14:35	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOS	111		25 - 150				07/01/17 15:26	07/17/17 14:35	5

Client Sample ID: Vault D
Date Collected: 06/19/17 18:20
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-12
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.3	B	2.0	0.47	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluoropentanoic acid (PFPeA)	6.5		2.0	1.0	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.80	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluoroheptanoic acid (PFHpA)	0.96	J	2.0	0.82	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorooctanoic acid (PFOA)	9.9		2.0	0.76	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.67	ng/L		07/01/17 15:26	07/17/17 16:32	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault D

Date Collected: 06/19/17 18:20

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-12

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		2.0	0.45	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.76	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.59	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.56	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorotetradecanoic acid (PFTeA)	0.25	J B	2.0	0.20	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorobutanesulfonic acid (PFBS)	11		2.0	0.93	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorohexanesulfonic acid (PFHxS)	33		2.0	0.88	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	8.4		2.0	0.73	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorooctanesulfonic acid (PFOS)	350		2.0	1.3	ng/L		07/01/17 15:26	07/17/17 16:32	1
Perfluorooctane Sulfonamide (FOSA)	ND		41	0.65	ng/L		07/01/17 15:26	07/17/17 16:32	1
6:2FTS	ND		20	3.9	ng/L		07/01/17 15:26	07/17/17 16:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C4 PFBA	19	*	25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C2 PFHxA	63		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C4 PFOA	90		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C5 PFNA	88		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C2 PFDA	104		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C2 PFUnA	81		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C2 PFDoA	76		25 - 150				07/01/17 15:26	07/17/17 16:32	1
18O2 PFHxS	83		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C4 PFOS	101		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C4-PFHpA	68		25 - 150				07/01/17 15:26	07/17/17 16:32	1
13C5 PFPeA	47		25 - 150				07/01/17 15:26	07/17/17 16:32	1
M2-6:2FTS	79		25 - 150				07/01/17 15:26	07/17/17 16:32	1

Client Sample ID: FB-01

Date Collected: 06/19/17 18:25

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-13

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.92	J B	1.9	0.44	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.95	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.76	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.77	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.19	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		07/01/17 15:26	07/13/17 09:07	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: FB-01
Date Collected: 06/19/17 18:25
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-13
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorooctanesulfonic acid (PFOS)	1.4	J	1.9	1.2	ng/L		07/01/17 15:26	07/13/17 09:07	1
Perfluorooctane Sulfonamide (FOSA)	ND		39	0.62	ng/L		07/01/17 15:26	07/13/17 09:07	1
6:2FTS	ND		19	3.7	ng/L		07/01/17 15:26	07/13/17 09:07	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	3	*	25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C4 PFBA	100		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C2 PFHxA	97		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C4 PFOA	107		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C5 PFNA	108		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C2 PFDA	118		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C2 PFUnA	102		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C2 PFDoA	96		25 - 150				07/01/17 15:26	07/13/17 09:07	1
18O2 PFHxS	114		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C4 PFOS	111		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C4-PFHpA	111		25 - 150				07/01/17 15:26	07/13/17 09:07	1
13C5 PFPeA	99		25 - 150				07/01/17 15:26	07/13/17 09:07	1
M2-6:2FTS	109		25 - 150				07/01/17 15:26	07/13/17 09:07	1

Client Sample ID: EB-01
Date Collected: 06/20/17 16:25
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-14
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.59	J B	2.0	0.45	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.78	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.74	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorotetradecanoic acid (PFTeA)	0.89	J B *	2.0	0.20	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.86	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		07/03/17 08:48	07/12/17 02:31	1
Perfluorooctane Sulfonamide (FOSA)	ND		39	0.63	ng/L		07/03/17 08:48	07/12/17 02:31	1
6:2FTS	ND		20	3.8	ng/L		07/03/17 08:48	07/12/17 02:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	29		25 - 150				07/03/17 08:48	07/12/17 02:31	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: EB-01
Date Collected: 06/20/17 16:25
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-14
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	110		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C2 PFHxA	118		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C4 PFOA	129		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C5 PFNA	123		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C2 PFDA	137		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C2 PFUnA	133		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C2 PFDoA	151 *		25 - 150	07/03/17 08:48	07/12/17 02:31	1
18O2 PFHxS	116		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C4 PFOS	115		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C4-PFHpA	128		25 - 150	07/03/17 08:48	07/12/17 02:31	1
13C5 PFPeA	108		25 - 150	07/03/17 08:48	07/12/17 02:31	1
M2-6:2FTS	131		25 - 150	07/03/17 08:48	07/12/17 02:31	1

Client Sample ID: OBG-MW-7
Date Collected: 06/20/17 10:05
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-15
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.0	B	1.9	0.44	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.96	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorohexanoic acid (PFHxA)	1.0	J	1.9	0.76	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorotetradecanoic acid (PFTeA)	1.0	J B *	1.9	0.19	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 02:38	1
Perfluorooctane Sulfonamide (FOSA)	ND		39	0.62	ng/L		07/03/17 08:48	07/12/17 02:38	1
6:2FTS	ND		19	3.7	ng/L		07/03/17 08:48	07/12/17 02:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	10 *		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C4 PFBA	54		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C2 PFHxA	99		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C4 PFOA	121		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C5 PFNA	114		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C2 PFDA	127		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C2 PFUnA	102		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C2 PFDoA	106		25 - 150	07/03/17 08:48	07/12/17 02:38	1
18O2 PFHxS	122		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C4 PFOS	126		25 - 150	07/03/17 08:48	07/12/17 02:38	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: OBG-MW-7

Lab Sample ID: 320-29302-15

Date Collected: 06/20/17 10:05

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4-PFHpA	129		25 - 150	07/03/17 08:48	07/12/17 02:38	1
13C5 PFPeA	85		25 - 150	07/03/17 08:48	07/12/17 02:38	1
M2-6:2FTS	134		25 - 150	07/03/17 08:48	07/12/17 02:38	1

Client Sample ID: B-24r

Lab Sample ID: 320-29302-16

Date Collected: 06/20/17 10:55

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	14	B	1.9	0.43	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.93	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorohexanoic acid (PFHxA)	3.9		1.9	0.74	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluoroheptanoic acid (PFHpA)	1.7	J	1.9	0.76	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorooctanoic acid (PFOA)	3.9		1.9	0.70	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.41	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.70	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.55	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.9	0.19	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorobutanesulfonic acid (PFBS)	3.7		1.9	0.86	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorohexanesulfonic acid (PFHxS)	5.4		1.9	0.82	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.67	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorooctanesulfonic acid (PFOS)	5.0		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 02:45	1
Perfluorooctane Sulfonamide (FOSA)	0.66	J	38	0.60	ng/L		07/03/17 08:48	07/12/17 02:45	1
6:2FTS	ND		19	3.6	ng/L		07/03/17 08:48	07/12/17 02:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	11	*	25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C4 PFBA	36		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C2 PFHxA	78		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C4 PFOA	97		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C5 PFNA	88		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C2 PFDA	86		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C2 PFUnA	72		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C2 PFDoA	77		25 - 150	07/03/17 08:48	07/12/17 02:45	1
18O2 PFHxS	107		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C4 PFOS	113		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C4-PFHpA	105		25 - 150	07/03/17 08:48	07/12/17 02:45	1
13C5 PFPeA	70		25 - 150	07/03/17 08:48	07/12/17 02:45	1
M2-6:2FTS	98		25 - 150	07/03/17 08:48	07/12/17 02:45	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: OBG-MW-9

Lab Sample ID: 320-29302-17

Date Collected: 06/20/17 11:55

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.4	J B	1.9	0.44	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.94	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.71	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.55	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorotetradecanoic acid (PFTeA)	ND *		1.9	0.19	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorobutanesulfonic acid (PFBS)	2.0		1.9	0.87	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorohexanesulfonic acid (PFHxS)	5.0		1.9	0.83	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorooctanesulfonic acid (PFOS)	2.9		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 02:52	1
Perfluorooctane Sulfonamide (FOSA)	ND		38	0.61	ng/L		07/03/17 08:48	07/12/17 02:52	1
6:2FTS	ND		19	3.6	ng/L		07/03/17 08:48	07/12/17 02:52	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	6	*	25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C4 PFBA	32		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C2 PFHxA	78		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C4 PFOA	110		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C5 PFNA	104		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C2 PFDA	101		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C2 PFUnA	84		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C2 PFDoA	83		25 - 150	07/03/17 08:48	07/12/17 02:52	1
18O2 PFHxS	109		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C4 PFOS	127		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C4-PFHpA	107		25 - 150	07/03/17 08:48	07/12/17 02:52	1
13C5 PFPeA	58		25 - 150	07/03/17 08:48	07/12/17 02:52	1
M2-6:2FTS	127		25 - 150	07/03/17 08:48	07/12/17 02:52	1

Client Sample ID: B-28

Lab Sample ID: 320-29302-18

Date Collected: 06/20/17 12:15

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.9	B	1.9	0.44	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.96	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorohexanoic acid (PFHxA)	0.92	J	1.9	0.76	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorooctanoic acid (PFOA)	0.79	J	1.9	0.73	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		07/03/17 08:48	07/12/17 02:59	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: B-28

Lab Sample ID: 320-29302-18

Date Collected: 06/20/17 12:15

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.9	0.19	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorooctanesulfonic acid (PFOS)	1.7	J	1.9	1.2	ng/L		07/03/17 08:48	07/12/17 02:59	1
Perfluorooctane Sulfonamide (FOSA)	1.2	J	39	0.62	ng/L		07/03/17 08:48	07/12/17 02:59	1
6:2FTS	ND		19	3.7	ng/L		07/03/17 08:48	07/12/17 02:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	7	*	25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C4 PFBA	72		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C2 PFHxA	108		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C4 PFOA	122		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C5 PFNA	101		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C2 PFDA	101		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C2 PFUnA	82		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C2 PFDoA	89		25 - 150				07/03/17 08:48	07/12/17 02:59	1
18O2 PFHxS	123		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C4 PFOS	126		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C4-PFHpA	126		25 - 150				07/03/17 08:48	07/12/17 02:59	1
13C5 PFPeA	98		25 - 150				07/03/17 08:48	07/12/17 02:59	1
M2-6:2FTS	146		25 - 150				07/03/17 08:48	07/12/17 02:59	1

Client Sample ID: B-27D

Lab Sample ID: 320-29302-19

Date Collected: 06/20/17 12:18

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.0	B	1.9	0.44	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.95	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.77	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluoroundecanoic acid (PFUnA)	1.4	J	1.9	0.72	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.9	0.19	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.88	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		07/03/17 08:48	07/12/17 03:06	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: B-27D
Date Collected: 06/20/17 12:18
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-19
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 03:06	1
Perfluorooctane Sulfonamide (FOSA)	ND		38	0.61	ng/L		07/03/17 08:48	07/12/17 03:06	1
6:2FTS	ND		19	3.7	ng/L		07/03/17 08:48	07/12/17 03:06	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C4 PFBA	74		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C2 PFHxA	97		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C4 PFOA	113		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C5 PFNA	109		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C2 PFDA	119		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C2 PFUnA	104		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C2 PFDoA	97		25 - 150				07/03/17 08:48	07/12/17 03:06	1
18O2 PFHxS	116		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C4 PFOS	112		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C4-PFHpA	115		25 - 150				07/03/17 08:48	07/12/17 03:06	1
13C5 PFPeA	93		25 - 150				07/03/17 08:48	07/12/17 03:06	1
M2-6:2FTS	127		25 - 150				07/03/17 08:48	07/12/17 03:06	1

Client Sample ID: B-18A
Date Collected: 06/20/17 14:10
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-20
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.2	B	1.9	0.44	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.94	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorooctanoic acid (PFOA)	1.2	J	1.9	0.71	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.9	0.19	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.87	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorooctanesulfonic acid (PFOS)	1.3	J	1.9	1.2	ng/L		07/03/17 08:48	07/12/17 03:13	1
Perfluorooctane Sulfonamide (FOSA)	ND		38	0.61	ng/L		07/03/17 08:48	07/12/17 03:13	1
6:2FTS	ND		19	3.6	ng/L		07/03/17 08:48	07/12/17 03:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	1	*	25 - 150				07/03/17 08:48	07/12/17 03:13	1
13C4 PFBA	76		25 - 150				07/03/17 08:48	07/12/17 03:13	1
13C2 PFHxA	105		25 - 150				07/03/17 08:48	07/12/17 03:13	1
13C4 PFOA	100		25 - 150				07/03/17 08:48	07/12/17 03:13	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: B-18A
Date Collected: 06/20/17 14:10
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-20
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	80		25 - 150	07/03/17 08:48	07/12/17 03:13	1
13C2 PFDA	79		25 - 150	07/03/17 08:48	07/12/17 03:13	1
13C2 PFUnA	72		25 - 150	07/03/17 08:48	07/12/17 03:13	1
13C2 PFDoA	90		25 - 150	07/03/17 08:48	07/12/17 03:13	1
18O2 PFHxS	124		25 - 150	07/03/17 08:48	07/12/17 03:13	1
13C4 PFOS	118		25 - 150	07/03/17 08:48	07/12/17 03:13	1
13C4-PFHpA	115		25 - 150	07/03/17 08:48	07/12/17 03:13	1
13C5 PFPeA	98		25 - 150	07/03/17 08:48	07/12/17 03:13	1
M2-6:2FTS	128		25 - 150	07/03/17 08:48	07/12/17 03:13	1

Client Sample ID: B-9
Date Collected: 06/20/17 14:25
Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-21
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	14	B	1.9	0.45	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluoropentanoic acid (PFPeA)	2.2		1.9	0.96	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorohexanoic acid (PFHxA)	9.3		1.9	0.77	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluoroheptanoic acid (PFHpA)	4.2		1.9	0.78	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorooctanoic acid (PFOA)	15		1.9	0.73	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.64	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.54	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorotetradecanoic acid (PFTeA)	1.2	J B *	1.9	0.19	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorobutanesulfonic acid (PFBS)	2.3		1.9	0.89	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorohexanesulfonic acid (PFHxS)	6.9		1.9	0.85	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.70	J	1.9	0.69	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorooctanesulfonic acid (PFOS)	13		1.9	1.2	ng/L		07/03/17 08:48	07/12/17 03:26	1
Perfluorooctane Sulfonamide (FOSA)	ND		39	0.62	ng/L		07/03/17 08:48	07/12/17 03:26	1
6:2FTS	ND		19	3.7	ng/L		07/03/17 08:48	07/12/17 03:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	0.6	*	25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C4 PFBA	61		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C2 PFHxA	90		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C4 PFOA	106		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C5 PFNA	103		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C2 PFDA	99		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C2 PFUnA	80		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C2 PFDoA	85		25 - 150	07/03/17 08:48	07/12/17 03:26	1
18O2 PFHxS	105		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C4 PFOS	108		25 - 150	07/03/17 08:48	07/12/17 03:26	1
13C4-PFHpA	108		25 - 150	07/03/17 08:48	07/12/17 03:26	1

TestAmerica Sacramento

Client Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: B-9

Lab Sample ID: 320-29302-21

Date Collected: 06/20/17 14:25

Matrix: Water

Date Received: 06/21/17 09:10

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	80		25 - 150	07/03/17 08:48	07/12/17 03:26	1
M2-6:2FTS	112		25 - 150	07/03/17 08:48	07/12/17 03:26	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - RE

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>LOQ</i>	<i>DL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Perfluorooctane Sulfonamide (FOSA)	3.3	J H	39	0.62	ng/L		07/25/17 08:56	07/27/17 15:58	1

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 FOSA	3	*	25 - 150	07/25/17 08:56	07/27/17 15:58	1

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		3C8 FOS/ (25-150)	3C4 PFB/ (25-150)	3C2 PFHx/ (25-150)	3C4 PFO/ (25-150)	3C5 PFN/ (25-150)	3C2 PFD/ (25-150)	3C2 PFUn (25-150)	3C2 PFDo (25-150)
320-29302-1	SUMP A	13 *		19 *	24 *	28	51	56	53
320-29302-1 - DL	SUMP A		47						
320-29302-2	Vault A	1 *	31	58	66	68	67	42	34
320-29302-2 - DL	Vault A								
320-29302-3	SUMP B	10 *	3 *	8 *	19 *	27	43	50	48
320-29302-3 - DL	SUMP B		58	72					
320-29302-4	Vault B	0.8 *	49	80	96	85	80	63	57
320-29302-5	SUMP C	8 *			16 *	24 *	38	44	46
320-29302-5 - DL	SUMP C		45	75					
320-29302-6	Vault C	20 *	28	66	89	84	94	91	89
320-29302-6 - DL	Vault C								
320-29302-7	SUMP E	4 *	11 *	33	45	50	66	68	54
320-29302-7 - DL	SUMP E								
320-29302-8	Vault E	0.5 *	46	78	71	65	82	62	57
320-29302-8 - DL	Vault E								
320-29302-8 - RE	Vault E	1 *							
320-29302-9	SUMP F	4 *	4 *	15 *	29	39	55	66	59
320-29302-9 - DL	SUMP F								
320-29302-10	Vault F	0.5 *	52	96	111	91	96	75	63
320-29302-10 - RE	Vault F	1 *							
320-29302-10 MS	Vault F	0.8 *	47	73	73	61	50	27	20 *
320-29302-10 MS - RE	Vault F	1 *							
320-29302-10 MSD	Vault F	8 *	55	88	101	87	84	54	50
320-29302-10 MSD - RE	Vault F	2 *							
320-29302-11	DUP-1	1 *	53	88	87	88	103	77	67
320-29302-11 - DL	DUP-1								
320-29302-12	Vault D	1 *	19 *	63	90	88	104	81	76
320-29302-13	FB-01	3 *	100	97	107	108	118	102	96
320-29302-14	EB-01	29	110	118	129	123	137	133	151 *
320-29302-15	OBG-MW-7	10 *	54	99	121	114	127	102	106
320-29302-16	B-24r	11 *	36	78	97	88	86	72	77
320-29302-17	OBG-MW-9	6 *	32	78	110	104	101	84	83
320-29302-18	B-28	7 *	72	108	122	101	101	82	89
320-29302-19	B-27D	1 *	74	97	113	109	119	104	97
320-29302-20	B-18A	1 *	76	105	100	80	79	72	90
320-29302-21	B-9	0.6 *	61	90	106	103	99	80	85
320-29302-21 - RE	B-9	3 *							
LCS 320-172064/2-A	Lab Control Sample	24 *	98	93	107	102	110	98	89
LCS 320-172104/2-A	Lab Control Sample	78	112	109	116	110	125	108	110
LCS 320-175097/2-A	Lab Control Sample	7 *							
LCS 320-175739/2-A	Lab Control Sample	75							
LCSD 320-172104/3-A	Lab Control Sample Dup	82	108	108	115	111	122	105	109
LCSD 320-175097/3-A	Lab Control Sample Dup	25							
LCSD 320-175739/3-A	Lab Control Sample Dup	43							
MB 320-172064/1-A	Method Blank	27	96	99	107	97	112	101	90
MB 320-172104/1-A	Method Blank	75	110	105	116	116	129	114	110
MB 320-175097/1-A	Method Blank	51							
MB 320-175739/1-A	Method Blank	55							

TestAmerica Sacramento

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)				
		8O2 PFHx (25-150)	3C4 PFO: (25-150)	3C4-PFHp (25-150)	3C5 PFPe (25-150)	W2-6:2FTS (25-150)
320-29302-1	SUMP A	53	43	24 *	16 *	37
320-29302-1 - DL	SUMP A	83	91			
320-29302-2	Vault A	89	92	72	51	68
320-29302-2 - DL	Vault A		108			
320-29302-3	SUMP B	44	40	14 *	9 *	43
320-29302-3 - DL	SUMP B	93	102		78	
320-29302-4	Vault B	94	99	100	75	92
320-29302-5	SUMP C		36	14 *		34
320-29302-5 - DL	SUMP C	85	98		77	
320-29302-6	Vault C	99	116	84	56	94
320-29302-6 - DL	Vault C		111			
320-29302-7	SUMP E	68	58	43	23 *	54
320-29302-7 - DL	SUMP E		106			
320-29302-8	Vault E	105	107	89	70	75
320-29302-8 - DL	Vault E		104			
320-29302-8 - RE	Vault E					
320-29302-9	SUMP F	52	50	23 *	11 *	44
320-29302-9 - DL	SUMP F	92	106		80	
320-29302-10	Vault F	127	127	114	87	113
320-29302-10 - RE	Vault F					
320-29302-10 MS	Vault F	98	97	81	69	84
320-29302-10 MS - RE	Vault F					
320-29302-10 MSD	Vault F	132	127	112	83	117
320-29302-10 MSD - RE	Vault F					
320-29302-11	DUP-1	117	116	107	82	78
320-29302-11 - DL	DUP-1		111			
320-29302-12	Vault D	83	101	68	47	79
320-29302-13	FB-01	114	111	111	99	109
320-29302-14	EB-01	116	115	128	108	131
320-29302-15	OBG-MW-7	122	126	129	85	134
320-29302-16	B-24r	107	113	105	70	98
320-29302-17	OBG-MW-9	109	127	107	58	127
320-29302-18	B-28	123	126	126	98	146
320-29302-19	B-27D	116	112	115	93	127
320-29302-20	B-18A	124	118	115	98	128
320-29302-21	B-9	105	108	108	80	112
320-29302-21 - RE	B-9					
LCS 320-172064/2-A	Lab Control Sample	110	108	110	97	114
LCS 320-172104/2-A	Lab Control Sample	119	113	115	102	122
LCS 320-175097/2-A	Lab Control Sample					
LCS 320-175739/2-A	Lab Control Sample					
LCSD 320-172104/3-A	Lab Control Sample Dup	111	113	118	104	130
LCSD 320-175097/3-A	Lab Control Sample Dup					
LCSD 320-175739/3-A	Lab Control Sample Dup					
MB 320-172064/1-A	Method Blank	111	103	104	95	106
MB 320-172104/1-A	Method Blank	116	117	121	110	134
MB 320-175097/1-A	Method Blank					
MB 320-175739/1-A	Method Blank					

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Surrogate Legend

$^{13}\text{C}_8$ FOSA = $^{13}\text{C}_8$ FOSA
 $^{13}\text{C}_4$ PFBA = $^{13}\text{C}_4$ PFBA
 $^{13}\text{C}_2$ PFHxA = $^{13}\text{C}_2$ PFHxA
 $^{13}\text{C}_4$ PFOA = $^{13}\text{C}_4$ PFOA
 $^{13}\text{C}_5$ PFNA = $^{13}\text{C}_5$ PFNA
 $^{13}\text{C}_2$ PFDA = $^{13}\text{C}_2$ PFDA
 $^{13}\text{C}_2$ PFUnA = $^{13}\text{C}_2$ PFUnA
 $^{13}\text{C}_2$ PFDaA = $^{13}\text{C}_2$ PFDaA
 $^{18}\text{O}_2$ PFHxS = $^{18}\text{O}_2$ PFHxS
 $^{13}\text{C}_4$ PFOS = $^{13}\text{C}_4$ PFOS
 $^{13}\text{C}_4$ -PFHpA = $^{13}\text{C}_4$ -PFHpA
 $^{13}\text{C}_5$ PFPeA = $^{13}\text{C}_5$ PFPeA
M2-6:2FTS = M2-6:2FTS

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QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-172064/1-A

Matrix: Water

Analysis Batch: 173915

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172064

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.15	J	2.0	0.46	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorotridecanoic Acid (PFTriA)	0.627	J	2.0	0.55	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorotetradecanoic acid (PFTeA)	0.890	J	2.0	0.20	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		07/01/17 15:26	07/13/17 06:21	1
Perfluorooctane Sulfonamide (FOSA)	0.825	J	40	0.64	ng/L		07/01/17 15:26	07/13/17 06:21	1
6:2FTS	ND		20	3.8	ng/L		07/01/17 15:26	07/13/17 06:21	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	27		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C4 PFBA	96		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C2 PFHxA	99		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C4 PFOA	107		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C5 PFNA	97		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C2 PFDA	112		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C2 PFUnA	101		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C2 PFDoA	90		25 - 150	07/01/17 15:26	07/13/17 06:21	1
18O2 PFHxS	111		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C4 PFOS	103		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C4-PFHpA	104		25 - 150	07/01/17 15:26	07/13/17 06:21	1
13C5 PFPeA	95		25 - 150	07/01/17 15:26	07/13/17 06:21	1
M2-6:2FTS	106		25 - 150	07/01/17 15:26	07/13/17 06:21	1

Lab Sample ID: LCS 320-172064/2-A

Matrix: Water

Analysis Batch: 173915

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.8		ng/L		114	74 - 138
Perfluoropentanoic acid (PFPeA)	40.0	40.1		ng/L		100	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	42.8		ng/L		107	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	43.5		ng/L		109	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	37.2		ng/L		93	63 - 141
Perfluorononanoic acid (PFNA)	40.0	42.2		ng/L		105	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	41.7		ng/L		104	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	41.2		ng/L		103	68 - 139

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-172064/2-A
Matrix: Water
Analysis Batch: 173915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 172064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	40.0	41.6		ng/L		104	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	44.7		ng/L		112	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	49.5		ng/L		124	47 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	34.9		ng/L		99	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.9		ng/L		107	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	45.8		ng/L		120	32 - 170
Perfluorodecanesulfonic acid (PFDS)	38.6	37.2		ng/L		97	35 - 157
Perfluorooctanesulfonic acid (PFOS)	37.1	38.3		ng/L		103	47 - 162
Perfluorooctane Sulfonamide (FOSA)	40.0	42.6		ng/L		106	59 - 163
6:2FTS	37.9	45.4		ng/L		120	60 - 140

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	24	*	25 - 150
13C4 PFBA	98		25 - 150
13C2 PFHxA	93		25 - 150
13C4 PFOA	107		25 - 150
13C5 PFNA	102		25 - 150
13C2 PFDA	110		25 - 150
13C2 PFUnA	98		25 - 150
13C2 PFDoA	89		25 - 150
18O2 PFHxS	110		25 - 150
13C4 PFOS	108		25 - 150
13C4-PFHpA	110		25 - 150
13C5 PFPeA	97		25 - 150
M2-6:2FTS	114		25 - 150

Lab Sample ID: 320-29302-10 MS
Matrix: Water
Analysis Batch: 174098

Client Sample ID: Vault F
Prep Type: Total/NA
Prep Batch: 172064

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	6.8	B	38.9	47.5		ng/L		105	74 - 138
Perfluoropentanoic acid (PFPeA)	15		38.9	53.6		ng/L		98	69 - 134
Perfluorohexanoic acid (PFHxA)	13		38.9	50.4		ng/L		95	70 - 136
Perfluoroheptanoic acid (PFHpA)	12		38.9	53.2		ng/L		106	63 - 135
Perfluorooctanoic acid (PFOA)	57		38.9	98.7		ng/L		106	63 - 141
Perfluorononanoic acid (PFNA)	1.2	J	38.9	42.7		ng/L		107	71 - 140
Perfluorodecanoic acid (PFDA)	ND		38.9	41.5		ng/L		107	66 - 141
Perfluoroundecanoic acid (PFUnA)	ND		38.9	45.1		ng/L		116	68 - 139
Perfluorododecanoic acid (PFDoA)	ND		38.9	39.1		ng/L		101	71 - 139

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: 320-29302-10 MS

Matrix: Water

Analysis Batch: 174098

Client Sample ID: Vault F

Prep Type: Total/NA

Prep Batch: 172064

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorotridecanoic Acid (PFTriA)	ND		38.9	43.3		ng/L		111	51 - 139
Perfluorotetradecanoic acid (PFTeA)	ND	F1	38.9	70.0	F1	ng/L		180	47 - 130
Perfluorobutanesulfonic acid (PFBS)	12		34.4	42.2		ng/L		87	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	35		35.4	75.3		ng/L		115	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	7.3		37.0	51.8		ng/L		120	32 - 170
Perfluorodecanesulfonic acid (PFDS)	ND		37.5	37.3		ng/L		100	35 - 157
Perfluorooctanesulfonic acid (PFOS)	300		36.1	334	4	ng/L		100	47 - 162
Perfluorooctane Sulfonamide (FOSA)	ND		38.9	51.6		ng/L		133	59 - 163
6:2FTS	ND		36.9	45.0		ng/L		122	60 - 140
		MS MS							
Isotope Dilution		%Recovery	Qualifier	Limits					
13C8 FOSA	0.8	*		25 - 150					
13C4 PFBA	47			25 - 150					
13C2 PFHxA	73			25 - 150					
13C4 PFOA	73			25 - 150					
13C5 PFNA	61			25 - 150					
13C2 PFDA	50			25 - 150					
13C2 PFUnA	27			25 - 150					
13C2 PFDoA	20	*		25 - 150					
18O2 PFHxS	98			25 - 150					
13C4 PFOS	97			25 - 150					
13C4-PFHpA	81			25 - 150					
13C5 PFPeA	69			25 - 150					
M2-6:2FTS	84			25 - 150					

Lab Sample ID: 320-29302-10 MSD

Matrix: Water

Analysis Batch: 174098

Client Sample ID: Vault F

Prep Type: Total/NA

Prep Batch: 172064

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Perfluorobutanoic acid (PFBA)	6.8	B	39.0	47.8		ng/L		105	74 - 138	1	30
Perfluoropentanoic acid (PFPeA)	15		39.0	56.0		ng/L		104	69 - 134	4	30
Perfluorohexanoic acid (PFHxA)	13		39.0	55.8		ng/L		109	70 - 136	10	30
Perfluoroheptanoic acid (PFHpA)	12		39.0	53.6		ng/L		107	63 - 135	1	30
Perfluorooctanoic acid (PFOA)	57		39.0	98.1		ng/L		104	63 - 141	1	30
Perfluorononanoic acid (PFNA)	1.2	J	39.0	42.7		ng/L		107	71 - 140	0	30
Perfluorodecanoic acid (PFDA)	ND		39.0	39.6		ng/L		102	66 - 141	5	30
Perfluoroundecanoic acid (PFUnA)	ND		39.0	43.1		ng/L		111	68 - 139	5	30
Perfluorododecanoic acid (PFDoA)	ND		39.0	40.0		ng/L		103	71 - 139	2	30
Perfluorotridecanoic Acid (PFTriA)	ND		39.0	46.8		ng/L		120	51 - 139	8	30

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: 320-29302-10 MSD

Matrix: Water

Analysis Batch: 174098

Client Sample ID: Vault F

Prep Type: Total/NA

Prep Batch: 172064

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Perfluorotetradecanoic acid (PFTeA)	ND	F1	39.0	61.8	F1	ng/L		158	47 - 130	13	30
Perfluorobutanesulfonic acid (PFBS)	12		34.5	41.4		ng/L		84	55 - 147	2	30
Perfluorohexanesulfonic acid (PFHxS)	35		35.5	68.5		ng/L		95	58 - 138	9	30
Perfluoroheptanesulfonic Acid (PFHpS)	7.3		37.1	52.8		ng/L		123	32 - 170	2	30
Perfluorodecanesulfonic acid (PFDS)	ND		37.6	39.1		ng/L		104	35 - 157	5	30
Perfluorooctanesulfonic acid (PFOS)	300		36.2	343	4	ng/L		125	47 - 162	3	30
Perfluorooctane Sulfonamide (FOSA)	ND		39.0	48.5		ng/L		125	59 - 163	6	30
6:2FTS	ND		36.9	42.6		ng/L		115	60 - 140	6	30
	MSD	MSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
13C8 FOSA	8	*	25 - 150								
13C4 PFBA	55		25 - 150								
13C2 PFHxA	88		25 - 150								
13C4 PFOA	101		25 - 150								
13C5 PFNA	87		25 - 150								
13C2 PFDA	84		25 - 150								
13C2 PFUnA	54		25 - 150								
13C2 PFDoA	50		25 - 150								
18O2 PFHxS	132		25 - 150								
13C4 PFOS	127		25 - 150								
13C4-PFHpA	112		25 - 150								
13C5 PFPeA	83		25 - 150								
M2-6:2FTS	117		25 - 150								

Lab Sample ID: MB 320-172104/1-A

Matrix: Water

Analysis Batch: 173630

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172104

Analyte	MB	MB	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	0.644	J	2.0	0.46	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorotetradecanoic acid (PFTeA)	0.720	J	2.0	0.20	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		07/03/17 08:48	07/12/17 00:55	1

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: MB 320-172104/1-A
Matrix: Water
Analysis Batch: 173630

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 172104

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		07/03/17 08:48	07/12/17 00:55	1
Perfluorooctane Sulfonamide (FOSA)	ND		40	0.64	ng/L		07/03/17 08:48	07/12/17 00:55	1
6:2FTS	ND		20	3.8	ng/L		07/03/17 08:48	07/12/17 00:55	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	75		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C4 PFBA	110		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C2 PFHxA	105		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C4 PFOA	116		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C5 PFNA	116		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C2 PFDA	129		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C2 PFUnA	114		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C2 PFDoA	110		25 - 150				07/03/17 08:48	07/12/17 00:55	1
18O2 PFHxS	116		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C4 PFOS	117		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C4-PFHpA	121		25 - 150				07/03/17 08:48	07/12/17 00:55	1
13C5 PFPeA	110		25 - 150				07/03/17 08:48	07/12/17 00:55	1
M2-6:2FTS	134		25 - 150				07/03/17 08:48	07/12/17 00:55	1

Lab Sample ID: LCS 320-172104/2-A
Matrix: Water
Analysis Batch: 173630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 172104

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	43.1		ng/L		108	74 - 138
Perfluoropentanoic acid (PFPeA)	40.0	41.8		ng/L		104	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	41.9		ng/L		105	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	42.8		ng/L		107	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	39.0		ng/L		97	63 - 141
Perfluorononanoic acid (PFNA)	40.0	43.5		ng/L		109	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	42.4		ng/L		106	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	41.9		ng/L		105	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	40.2		ng/L		101	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	39.5		ng/L		99	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	51.0		ng/L		127	47 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	33.5		ng/L		95	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.3		ng/L		105	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	44.0		ng/L		115	32 - 170
Perfluorodecanesulfonic acid (PFDS)	38.6	39.4		ng/L		102	35 - 157

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-172104/2-A
Matrix: Water
Analysis Batch: 173630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 172104
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS)	37.1	40.9		ng/L		110	47 - 162
Perfluorooctane Sulfonamide (FOSA)	40.0	42.5		ng/L		106	59 - 163
6:2FTS	37.9	47.2		ng/L		124	60 - 140

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	78		25 - 150
13C4 PFBA	112		25 - 150
13C2 PFHxA	109		25 - 150
13C4 PFOA	116		25 - 150
13C5 PFNA	110		25 - 150
13C2 PFDA	125		25 - 150
13C2 PFUnA	108		25 - 150
13C2 PFDoA	110		25 - 150
18O2 PFHxS	119		25 - 150
13C4 PFOS	113		25 - 150
13C4-PFHpA	115		25 - 150
13C5 PFPeA	102		25 - 150
M2-6:2FTS	122		25 - 150

Lab Sample ID: LCSD 320-172104/3-A
Matrix: Water
Analysis Batch: 173630

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 172104
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	44.8		ng/L		112	74 - 138	4	30
Perfluoropentanoic acid (PFPeA)	40.0	42.4		ng/L		106	69 - 134	1	30
Perfluorohexanoic acid (PFHxA)	40.0	41.2		ng/L		103	70 - 136	2	30
Perfluoroheptanoic acid (PFHpA)	40.0	41.8		ng/L		104	63 - 135	2	30
Perfluorooctanoic acid (PFOA)	40.0	38.3		ng/L		96	63 - 141	2	30
Perfluorononanoic acid (PFNA)	40.0	41.6		ng/L		104	71 - 140	5	30
Perfluorodecanoic acid (PFDA)	40.0	43.4		ng/L		108	66 - 141	2	30
Perfluoroundecanoic acid (PFUnA)	40.0	44.0		ng/L		110	68 - 139	5	30
Perfluorododecanoic acid (PFDoA)	40.0	40.3		ng/L		101	71 - 139	0	30
Perfluorotridecanoic Acid (PFTriA)	40.0	43.3		ng/L		108	51 - 139	9	30
Perfluorotetradecanoic acid (PFTeA)	40.0	56.7	*	ng/L		142	47 - 130	11	30
Perfluorobutanesulfonic acid (PFBS)	35.4	36.3		ng/L		103	55 - 147	8	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	42.7		ng/L		117	58 - 138	11	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	44.8		ng/L		118	32 - 170	2	30
Perfluorodecanesulfonic acid (PFDS)	38.6	36.8		ng/L		95	35 - 157	7	30
Perfluorooctanesulfonic acid (PFOS)	37.1	39.0		ng/L		105	47 - 162	5	30

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCSD 320-172104/3-A

Matrix: Water

Analysis Batch: 173630

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 172104

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctane Sulfonamide (FOSA)	40.0	42.5		ng/L		106	59 - 163	0	30
6:2FTS	37.9	43.2		ng/L		114	60 - 140	9	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C8 FOSA	82		25 - 150
13C4 PFBA	108		25 - 150
13C2 PFHxA	108		25 - 150
13C4 PFOA	115		25 - 150
13C5 PFNA	111		25 - 150
13C2 PFDA	122		25 - 150
13C2 PFUnA	105		25 - 150
13C2 PFDoA	109		25 - 150
18O2 PFHxS	111		25 - 150
13C4 PFOS	113		25 - 150
13C4-PFHpA	118		25 - 150
13C5 PFPeA	104		25 - 150
M2-6:2FTS	130		25 - 150

Lab Sample ID: MB 320-175097/1-A

Matrix: Water

Analysis Batch: 175529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 175097

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	ND		40	0.64	ng/L		07/20/17 10:13	07/23/17 14:39	1

Isotope Dilution	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 FOSA	51		25 - 150	07/20/17 10:13	07/23/17 14:39	1

Lab Sample ID: LCS 320-175097/2-A

Matrix: Water

Analysis Batch: 175529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 175097

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	43.9		ng/L		110	74 - 138
Perfluoropentanoic acid (PFPeA)	40.0	40.4		ng/L		101	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	41.9		ng/L		105	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	42.1		ng/L		105	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	39.8		ng/L		100	63 - 141
Perfluorononanoic acid (PFNA)	40.0	42.2		ng/L		105	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		107	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	41.4		ng/L		104	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	46.3		ng/L		116	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	54.0		ng/L		135	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	73.6 *		ng/L		184	47 - 130

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-175097/2-A
Matrix: Water
Analysis Batch: 175529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 175097

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	35.4	39.2		ng/L		111	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.8		ng/L		98	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	44.5		ng/L		117	32 - 170
Perfluorodecanesulfonic acid (PFDS)	38.6	42.5		ng/L		110	35 - 157
Perfluorooctanesulfonic acid (PFOS)	37.1	38.2		ng/L		103	47 - 162
Perfluorooctane Sulfonamide (FOSA)	40.0	43.1		ng/L		108	59 - 163
6:2FTS	37.9	44.6		ng/L		118	60 - 140
		LCS LCS					
Isotope Dilution		%Recovery	Qualifier			Limits	
13C8 FOSA		7	*			25 - 150	

Lab Sample ID: LCSD 320-175097/3-A
Matrix: Water
Analysis Batch: 175529

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 175097

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	45.8		ng/L		114	74 - 138	4	30
Perfluoropentanoic acid (PFPeA)	40.0	43.1		ng/L		108	69 - 134	6	30
Perfluorohexanoic acid (PFHxA)	40.0	43.2		ng/L		108	70 - 136	3	30
Perfluoroheptanoic acid (PFHpA)	40.0	42.3		ng/L		106	63 - 135	0	30
Perfluorooctanoic acid (PFOA)	40.0	41.6		ng/L		104	63 - 141	4	30
Perfluorononanoic acid (PFNA)	40.0	40.9		ng/L		102	71 - 140	3	30
Perfluorodecanoic acid (PFDA)	40.0	39.8		ng/L		100	66 - 141	7	30
Perfluoroundecanoic acid (PFUnA)	40.0	42.6		ng/L		107	68 - 139	3	30
Perfluorododecanoic acid (PFDoA)	40.0	45.0		ng/L		113	71 - 139	3	30
Perfluorotridecanoic Acid (PFTriA)	40.0	48.6		ng/L		122	51 - 139	10	30
Perfluorotetradecanoic acid (PFTeA)	40.0	68.4	*	ng/L		171	47 - 130	7	30
Perfluorobutanesulfonic acid (PFBS)	35.4	39.5		ng/L		112	55 - 147	1	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.3		ng/L		97	58 - 138	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	45.3		ng/L		119	32 - 170	2	30
Perfluorodecanesulfonic acid (PFDS)	38.6	43.3		ng/L		112	35 - 157	2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	41.3		ng/L		111	47 - 162	8	30
Perfluorooctane Sulfonamide (FOSA)	40.0	44.6		ng/L		112	59 - 163	3	30
6:2FTS	37.9	49.4		ng/L		130	60 - 140	10	30

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

	LCSD	LCSD	
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C8 FOSA	25		25 - 150

Lab Sample ID: MB 320-175739/1-A
Matrix: Water
Analysis Batch: 176414

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 175739

<i>Analyte</i>	MB	MB								
	<i>Result</i>	<i>Qualifier</i>	<i>LOQ</i>	<i>DL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>	
Perfluorooctane Sulfonamide (FOSA)	ND		40	0.64	ng/L		07/25/17 08:54	07/27/17 15:38	1	
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>	
13C8 FOSA	55		25 - 150				07/25/17 08:54	07/27/17 15:38	1	

Lab Sample ID: LCS 320-175739/2-A
Matrix: Water
Analysis Batch: 176414

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 175739

<i>Analyte</i>		Spike	LCS	LCS						
		<i>Added</i>	<i>Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>		
Perfluorooctane Sulfonamide (FOSA)		40.0	46.9		ng/L		117	59 - 163		
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>							
13C8 FOSA	75		25 - 150							

Lab Sample ID: LCSD 320-175739/3-A
Matrix: Water
Analysis Batch: 176414

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 175739

<i>Analyte</i>		Spike	LCSD	LCSD							
		<i>Added</i>	<i>Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>	<i>RPD</i>	<i>Limit</i>	
Perfluorooctane Sulfonamide (FOSA)		40.0	44.3		ng/L		111	59 - 163	6	30	
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
13C8 FOSA	43		25 - 150								

Method: 537 (modified) - Perfluorinated Hydrocarbons - RE

Lab Sample ID: 320-29302-10 MS
Matrix: Water
Analysis Batch: 175529

Client Sample ID: Vault F
Prep Type: Total/NA
Prep Batch: 175097

<i>Analyte</i>	Sample	Sample	Spike	MS	MS					
	<i>Result</i>	<i>Qualifier</i>	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>	
Perfluorooctane Sulfonamide (FOSA) - RE	22	J H	37.6	58.0	H	ng/L		97	59 - 163	
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>							
13C8 FOSA - RE	1	*	25 - 150							

Lab Sample ID: 320-29302-10 MSD
Matrix: Water
Analysis Batch: 175529

Client Sample ID: Vault F
Prep Type: Total/NA
Prep Batch: 175097

<i>Analyte</i>	Sample	Sample	Spike	MSD	MSD						
	<i>Result</i>	<i>Qualifier</i>	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>	<i>RPD</i>	<i>Limit</i>
Perfluorooctane Sulfonamide (FOSA) - RE	22	J H	38.5	53.1	H	ng/L		82	59 - 163	9	30

TestAmerica Sacramento

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD</i> <i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
<u>13C8 FOSA - RE</u>		2 *	25 - 150

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QC Association Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

LCMS

Prep Batch: 172064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-1 - DL	SUMP A	Total/NA	Water	3535	
320-29302-1	SUMP A	Total/NA	Water	3535	
320-29302-2	Vault A	Total/NA	Water	3535	
320-29302-2 - DL	Vault A	Total/NA	Water	3535	
320-29302-3	SUMP B	Total/NA	Water	3535	
320-29302-3 - DL	SUMP B	Total/NA	Water	3535	
320-29302-4	Vault B	Total/NA	Water	3535	
320-29302-5	SUMP C	Total/NA	Water	3535	
320-29302-5 - DL	SUMP C	Total/NA	Water	3535	
320-29302-6 - DL	Vault C	Total/NA	Water	3535	
320-29302-6	Vault C	Total/NA	Water	3535	
320-29302-7	SUMP E	Total/NA	Water	3535	
320-29302-7 - DL	SUMP E	Total/NA	Water	3535	
320-29302-8 - DL	Vault E	Total/NA	Water	3535	
320-29302-8	Vault E	Total/NA	Water	3535	
320-29302-9 - DL	SUMP F	Total/NA	Water	3535	
320-29302-9	SUMP F	Total/NA	Water	3535	
320-29302-10	Vault F	Total/NA	Water	3535	
320-29302-11 - DL	DUP-1	Total/NA	Water	3535	
320-29302-11	DUP-1	Total/NA	Water	3535	
320-29302-12	Vault D	Total/NA	Water	3535	
320-29302-13	FB-01	Total/NA	Water	3535	
MB 320-172064/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-172064/2-A	Lab Control Sample	Total/NA	Water	3535	
320-29302-10 MS	Vault F	Total/NA	Water	3535	
320-29302-10 MSD	Vault F	Total/NA	Water	3535	

Prep Batch: 172104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-14	EB-01	Total/NA	Water	3535	
320-29302-15	OBG-MW-7	Total/NA	Water	3535	
320-29302-16	B-24r	Total/NA	Water	3535	
320-29302-17	OBG-MW-9	Total/NA	Water	3535	
320-29302-18	B-28	Total/NA	Water	3535	
320-29302-19	B-27D	Total/NA	Water	3535	
320-29302-20	B-18A	Total/NA	Water	3535	
320-29302-21	B-9	Total/NA	Water	3535	
MB 320-172104/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-172104/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-172104/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 173630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-14	EB-01	Total/NA	Water	537 (modified)	172104
320-29302-15	OBG-MW-7	Total/NA	Water	537 (modified)	172104
320-29302-16	B-24r	Total/NA	Water	537 (modified)	172104
320-29302-17	OBG-MW-9	Total/NA	Water	537 (modified)	172104
320-29302-18	B-28	Total/NA	Water	537 (modified)	172104
320-29302-19	B-27D	Total/NA	Water	537 (modified)	172104
320-29302-20	B-18A	Total/NA	Water	537 (modified)	172104
320-29302-21	B-9	Total/NA	Water	537 (modified)	172104

TestAmerica Sacramento

QC Association Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

LCMS (Continued)

Analysis Batch: 173630 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-172104/1-A	Method Blank	Total/NA	Water	537 (modified)	172104
LCS 320-172104/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	172104
LCS 320-172104/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	172104

Analysis Batch: 173915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-1	SUMP A	Total/NA	Water	537 (modified)	172064
320-29302-2	Vault A	Total/NA	Water	537 (modified)	172064
MB 320-172064/1-A	Method Blank	Total/NA	Water	537 (modified)	172064
LCS 320-172064/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	172064

Analysis Batch: 174098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-3	SUMP B	Total/NA	Water	537 (modified)	172064
320-29302-5	SUMP C	Total/NA	Water	537 (modified)	172064
320-29302-6	Vault C	Total/NA	Water	537 (modified)	172064
320-29302-7	SUMP E	Total/NA	Water	537 (modified)	172064
320-29302-8	Vault E	Total/NA	Water	537 (modified)	172064
320-29302-9	SUMP F	Total/NA	Water	537 (modified)	172064
320-29302-10	Vault F	Total/NA	Water	537 (modified)	172064
320-29302-11	DUP-1	Total/NA	Water	537 (modified)	172064
320-29302-13	FB-01	Total/NA	Water	537 (modified)	172064
320-29302-10 MS	Vault F	Total/NA	Water	537 (modified)	172064
320-29302-10 MSD	Vault F	Total/NA	Water	537 (modified)	172064

Analysis Batch: 174615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-1 - DL	SUMP A	Total/NA	Water	537 (modified)	172064
320-29302-2 - DL	Vault A	Total/NA	Water	537 (modified)	172064
320-29302-3 - DL	SUMP B	Total/NA	Water	537 (modified)	172064
320-29302-5 - DL	SUMP C	Total/NA	Water	537 (modified)	172064
320-29302-6 - DL	Vault C	Total/NA	Water	537 (modified)	172064
320-29302-7 - DL	SUMP E	Total/NA	Water	537 (modified)	172064
320-29302-9 - DL	SUMP F	Total/NA	Water	537 (modified)	172064

Analysis Batch: 174619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-8 - DL	Vault E	Total/NA	Water	537 (modified)	172064
320-29302-11 - DL	DUP-1	Total/NA	Water	537 (modified)	172064

Analysis Batch: 174622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-4	Vault B	Total/NA	Water	537 (modified)	172064
320-29302-12	Vault D	Total/NA	Water	537 (modified)	172064

Prep Batch: 175097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-8 - RE	Vault E	Total/NA	Water	3535	
320-29302-10 - RE	Vault F	Total/NA	Water	3535	
MB 320-175097/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-175097/2-A	Lab Control Sample	Total/NA	Water	3535	

TestAmerica Sacramento

QC Association Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

LCMS (Continued)

Prep Batch: 175097 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 320-175097/3-A	Lab Control Sample Dup	Total/NA	Water	3535	
320-29302-10 MS - RE	Vault F	Total/NA	Water	3535	
320-29302-10 MSD - RE	Vault F	Total/NA	Water	3535	

Analysis Batch: 175529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-8 - RE	Vault E	Total/NA	Water	537 (modified)	175097
320-29302-10 - RE	Vault F	Total/NA	Water	537 (modified)	175097
MB 320-175097/1-A	Method Blank	Total/NA	Water	537 (modified)	175097
LCS 320-175097/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	175097
LCSD 320-175097/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	175097
320-29302-10 MS - RE	Vault F	Total/NA	Water	537 (modified)	175097
320-29302-10 MSD - RE	Vault F	Total/NA	Water	537 (modified)	175097

Prep Batch: 175739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-21 - RE	B-9	Total/NA	Water	3535	
MB 320-175739/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-175739/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-175739/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 176414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29302-21 - RE	B-9	Total/NA	Water	537 (modified)	175739
MB 320-175739/1-A	Method Blank	Total/NA	Water	537 (modified)	175739
LCS 320-175739/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	175739
LCSD 320-175739/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	175739

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: SUMP A

Date Collected: 06/19/17 11:40

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173915	07/13/17 07:16	SBC	TAL SAC
Total/NA	Prep	3535	DL		257 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50			174615	07/17/17 12:15	SBC	TAL SAC

Client Sample ID: Vault A

Date Collected: 06/19/17 12:10

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.1 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173915	07/13/17 07:23	SBC	TAL SAC
Total/NA	Prep	3535	DL		257.1 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			174615	07/17/17 12:43	SBC	TAL SAC

Client Sample ID: SUMP B

Date Collected: 06/19/17 13:00

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255.1 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 07:37	SBC	TAL SAC
Total/NA	Prep	3535	DL		255.1 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100			174615	07/17/17 12:01	SBC	TAL SAC

Client Sample ID: Vault B

Date Collected: 06/19/17 13:55

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.6 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174622	07/17/17 16:05	SBC	TAL SAC

Client Sample ID: SUMP C

Date Collected: 06/19/17 14:15

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.3 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 07:51	SBC	TAL SAC
Total/NA	Prep	3535	DL		257.3 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100			174615	07/17/17 12:08	SBC	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault C

Date Collected: 06/19/17 14:45

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 07:58	SBC	TAL SAC
Total/NA	Prep	3535	DL		262 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			174615	07/17/17 12:49	SBC	TAL SAC

Client Sample ID: SUMP E

Date Collected: 06/19/17 16:25

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 08:05	SBC	TAL SAC
Total/NA	Prep	3535	DL		258 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	20			174615	07/17/17 12:29	SBC	TAL SAC

Client Sample ID: Vault E

Date Collected: 06/19/17 16:50

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.5 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 08:12	SBC	TAL SAC
Total/NA	Prep	3535	DL		258.5 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			174619	07/17/17 14:28	SBC	TAL SAC
Total/NA	Prep	3535	RE		250.9 mL	0.50 mL	175097	07/20/17 10:13	CCB	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			175529	07/23/17 16:44	SBC	TAL SAC

Client Sample ID: SUMP F

Date Collected: 06/19/17 17:15

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.2 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 08:19	SBC	TAL SAC
Total/NA	Prep	3535	DL		254.2 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50			174615	07/17/17 12:22	SBC	TAL SAC

Client Sample ID: Vault F

Date Collected: 06/19/17 17:40

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.1 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: Vault F

Date Collected: 06/19/17 17:40

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 08:25	SBC	TAL SAC
Total/NA	Prep	3535	RE		259 mL	0.50 mL	175097	07/20/17 10:13	CCB	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			175529	07/23/17 16:57	SBC	TAL SAC

Client Sample ID: DUP-1

Date Collected: 06/19/17 00:00

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.2 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 08:53	SBC	TAL SAC
Total/NA	Prep	3535	DL		254.2 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			174619	07/17/17 14:35	SBC	TAL SAC

Client Sample ID: Vault D

Date Collected: 06/19/17 18:20

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			245.8 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174622	07/17/17 16:32	SBC	TAL SAC

Client Sample ID: FB-01

Date Collected: 06/19/17 18:25

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.1 mL	0.50 mL	172064	07/01/17 15:26	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			174098	07/13/17 09:07	SBC	TAL SAC

Client Sample ID: EB-01

Date Collected: 06/20/17 16:25

Date Received: 06/21/17 09:10

Lab Sample ID: 320-29302-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.2 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 02:31	SBC	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: OBG-MW-7

Lab Sample ID: 320-29302-15

Date Collected: 06/20/17 10:05

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.3 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 02:38	SBC	TAL SAC

Client Sample ID: B-24r

Lab Sample ID: 320-29302-16

Date Collected: 06/20/17 10:55

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.5 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 02:45	SBC	TAL SAC

Client Sample ID: OBG-MW-9

Lab Sample ID: 320-29302-17

Date Collected: 06/20/17 11:55

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263.1 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 02:52	SBC	TAL SAC

Client Sample ID: B-28

Lab Sample ID: 320-29302-18

Date Collected: 06/20/17 12:15

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.8 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 02:59	SBC	TAL SAC

Client Sample ID: B-27D

Lab Sample ID: 320-29302-19

Date Collected: 06/20/17 12:18

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 03:06	SBC	TAL SAC

Client Sample ID: B-18A

Lab Sample ID: 320-29302-20

Date Collected: 06/20/17 14:10

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.7 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 03:13	SBC	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Client Sample ID: B-9

Lab Sample ID: 320-29302-21

Date Collected: 06/20/17 14:25

Matrix: Water

Date Received: 06/21/17 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.8 mL	0.5 mL	172104	07/03/17 08:48	J1S	TAL SAC
Total/NA	Analysis	537 (modified)		1			173630	07/12/17 03:26	SBC	TAL SAC
Total/NA	Prep	3535	RE		256.3 mL	0.50 mL	175739	07/25/17 08:56	J1S	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			176414	07/27/17 15:58	SBC	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Oregon	NELAP	10	4040	01-28-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	6:2FTS
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctane Sulfonamide (FOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic Acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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Sample Summary

Client: O'Brien & Gere Inc of North America
Project/Site: PFC Analysis

TestAmerica Job ID: 320-29302-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-29302-1	SUMP A	Water	06/19/17 11:40	06/21/17 09:10
320-29302-2	Vault A	Water	06/19/17 12:10	06/21/17 09:10
320-29302-3	SUMP B	Water	06/19/17 13:00	06/21/17 09:10
320-29302-4	Vault B	Water	06/19/17 13:55	06/21/17 09:10
320-29302-5	SUMP C	Water	06/19/17 14:15	06/21/17 09:10
320-29302-6	Vault C	Water	06/19/17 14:45	06/21/17 09:10
320-29302-7	SUMP E	Water	06/19/17 16:25	06/21/17 09:10
320-29302-8	Vault E	Water	06/19/17 16:50	06/21/17 09:10
320-29302-9	SUMP F	Water	06/19/17 17:15	06/21/17 09:10
320-29302-10	Vault F	Water	06/19/17 17:40	06/21/17 09:10
320-29302-11	DUP-1	Water	06/19/17 00:00	06/21/17 09:10
320-29302-12	Vault D	Water	06/19/17 18:20	06/21/17 09:10
320-29302-13	FB-01	Water	06/19/17 18:25	06/21/17 09:10
320-29302-14	EB-01	Water	06/20/17 16:25	06/21/17 09:10
320-29302-15	OBG-MW-7	Water	06/20/17 10:05	06/21/17 09:10
320-29302-16	B-24r	Water	06/20/17 10:55	06/21/17 09:10
320-29302-17	OBG-MW-9	Water	06/20/17 11:55	06/21/17 09:10
320-29302-18	B-28	Water	06/20/17 12:15	06/21/17 09:10
320-29302-19	B-27D	Water	06/20/17 12:18	06/21/17 09:10
320-29302-20	B-18A	Water	06/20/17 14:10	06/21/17 09:10
320-29302-21	B-9	Water	06/20/17 14:25	06/21/17 09:10

Chain of Custody Record

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 373-5600 Fax (916) 372-1059

Client Information		Lab PM: Kellmann, Jill		Carrier Tracking No(s): FEDEX		COC No: 320-16107-3760.2	
Client Contact: Mr. Clifford Yantz		E-Mail: jill.kellmann@testamericainc.com		7809 4022754		Page: 1 of 3	
Company: O'Brien & Gere Inc of North America		Address: 37000 Grand River Ave Suite 260		Due Date Requested: 2 week		Analysis Requested:	
City: Farmington Hills		State Zip: MI, 48335		PO #: 11700138		Preservation Codes:	
Phone: 248-477-5701(Tel)		Email: yantzcso@obg.com		Project #: 32008780		M - Hexane N - None O - AsNaO2 P - Na2O4S D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
PFC Analysis: RACER coldwater Rd LF		Site: coldwater Rd Landfill		Field Filtered Sample (Yes or No)		Total Number of containers	
Sample Identification		Sample Date		Sample Time		Sample Matrix	
SUMP A		6/19/17		1140		Water	
Vault A				1210		Water	
SUMP B				1300		Water	
Vault B				1355		Water	
SUMP C				1415		Water	
Vault C				1445		Water	
VAULT D		 		1515		Water	
VAULT D		 		1540		Water	
SUMP E				1625		Water	
Vault E				1650		Water	
SUMP F				1715		Water	
Special Instructions/Note:		PFC, IDA - (MOD) PFA's, Standard List		Perform MS/MSD (Yes or No)		PFC, IDA - (MOD) PFA's, Standard List	
Barcode: 320-29302 Chain of Custody							
Possible Hazard Identification		<input checked="" type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant	
Deliverable Requested: I, II, III, IV, Other (specify)		<input type="checkbox"/> Poison B		<input type="checkbox"/> Unknown		<input type="checkbox"/> Radiological	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment: FEDEX	
Relinquished by: K. Sill		Date/Time: 6/20/17 1735		Company: obg		Received by: FEDEX overnight	
Relinquished by:		Date/Time:		Company:		Received by: [Signature]	
Relinquished by:		Date/Time:		Company:		Received by: [Signature]	
Custody Seals Intact: A Yes A No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 6.0			



Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 320-29302-1

Login Number: 29302

List Source: TestAmerica Sacramento

List Number: 1

Creator: Turpen, Troy

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



OBG

THERE'S A WAY

