

October 06, 2017

Bob Walker
H2GO Brunswick Regional Water & Sewer
516 Village Road, NE
Leland, North Carolina 28451

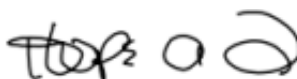
Re: Sample Analysis
Work Order: 431203

Dear Bob Walker:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 22, 2017. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4778.

Sincerely,



Hope Taylor
Project Manager

Purchase Order: signed quote
Enclosures

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis Report for

H2GO001 H2GO Brunswick Regional Water & Sewer

Client SDG: 431203 GEL Work Order: 431203

The Qualifiers in this report are defined as follows:

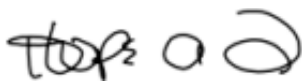
- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Hope Taylor.

Reviewed by



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : H2GO Brunswick Regional Water &
Sewer
Address : 516 Village Road, NE
Leland, North Carolina 28451
Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E
Sample ID: 431203001
Matrix: Water
Collect Date: 21-AUG-17 10:50
Receive Date: 22-AUG-17
Collector: Client

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>NC 6 PFCs by LC-MS/MS "As Received"</i>												
Nafion Byproduct 1	X	26.0			ng/L	0.0174	5	JLS	09/08/17	1327	1698648	1
Nafion Byproduct 2	X	52.0			ng/L	0.0174	5					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	X	12.0			ng/L	0.0174	5					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	X	21.6			ng/L	0.0174	5					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	X	48.2			ng/L	0.0174	5					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0174	5					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	X	14.1			ng/L	0.0174	5					
Perfluoro-4-methoxybutanic acid (PFMOBA)	X	4.05			ng/L	0.0174	5					
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.15	3.27	ng/L	0.0174	1	JLS	08/24/17	0407	1694307	2
Fluorotelomer sulfonate 6:2 (6:2 FTS)	J	1.58	1.15	3.31	ng/L	0.0174	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.15	3.34	ng/L	0.0174	1					
Perfluorobutanesulfonate (PFBS)		4.97	0.574	1.55	ng/L	0.0174	1					
Perfluorobutyric acid (PFBA)		14.4	0.574	1.74	ng/L	0.0174	1					
Perfluorodecanesulfonate (PFDS)	U	ND	0.574	1.69	ng/L	0.0174	1					
Perfluorodecanoic acid (PFDA)		2.52	0.574	1.74	ng/L	0.0174	1					

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E
Sample ID: 431203001

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
Perfluorododecanoic acid (PFDoA)	U	ND	0.574	1.74	ng/L	0.0174	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.574	1.65	ng/L	0.0174	1					
Perfluoroheptanoic acid (PFHpA)		22.3	0.574	1.74	ng/L	0.0174	1					
Perfluorohexanesulfonate (PFHxS)		10.2	0.574	1.58	ng/L	0.0174	1					
Perfluorohexanoic acid (PFHxA)		32.6	0.574	1.74	ng/L	0.0174	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.574	1.67	ng/L	0.0174	1					
Perfluorononanoic acid (PFNA)		3.31	0.574	1.74	ng/L	0.0174	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.574	1.62	ng/L	0.0174	1					
Perfluorooctanesulfonate (PFOS)		20.8	0.574	1.74	ng/L	0.0174	1					
Perfluorooctanoic acid (PFOA)		16.6	0.574	1.74	ng/L	0.0174	1					
Perfluoropentanesulfonate (PFPeS)	J	1.43	0.574	1.64	ng/L	0.0174	1					
Perfluoropentanoic acid (PFPeA)		34.0	0.574	1.74	ng/L	0.0174	1					
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.574	1.74	ng/L	0.0174	1					
Perfluorotridecanoic acid (PFTTrDA)	U	ND	0.574	1.74	ng/L	0.0174	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.574	1.74	ng/L	0.0174	1					
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)		64.8	2.87	8.70	ng/L	0.0174	5	JLS	08/24/17	1231	1694307	3
Semi-Volatile-GC/MS												
<i>SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"</i>												
1,1'-Biphenyl	U	ND	3.00	10.0	ug/L	0.001	1	AGS1	08/25/17	1959	1694954	4
1,2,4,5-	U	ND	3.00	10.0	ug/L	0.001	1					

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Certificate of Analysis

Company : H2GO Brunswick Regional Water &
Sewer
Address : 516 Village Road, NE
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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E
Sample ID: 431203001

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"												
Tetrachlorobenzene												
2,3,4,6-	U	ND	3.00	10.0	ug/L	0.001	1					
Tetrachlorophenol												
2,4,5-Trichlorophenol	U	ND	3.00	10.0	ug/L	0.001	1					
2,4,6-Trichlorophenol	U	ND	3.00	10.0	ug/L	0.001	1					
2,4-Dichlorophenol	U	ND	3.00	10.0	ug/L	0.001	1					
2,4-Dimethylphenol	U	ND	3.00	10.0	ug/L	0.001	1					
2,4-Dinitrophenol	U	ND	5.00	20.0	ug/L	0.001	1					
2,4-Dinitrotoluene	U	ND	3.00	10.0	ug/L	0.001	1					
2,6-Dinitrotoluene	U	ND	3.00	10.0	ug/L	0.001	1					
2-Chloronaphthalene	U	ND	0.410	1.00	ug/L	0.001	1					
2-Chlorophenol	U	ND	3.00	10.0	ug/L	0.001	1					
2-Methyl-4,6-	U	ND	3.00	10.0	ug/L	0.001	1					
dinitrophenol												
2-Methylnaphthalene	U	ND	0.300	1.00	ug/L	0.001	1					
2-Nitrophenol	U	ND	3.00	10.0	ug/L	0.001	1					
3,3'-Dichlorobenzidine	U	ND	3.00	10.0	ug/L	0.001	1					
4-	U	ND	3.00	10.0	ug/L	0.001	1					
Bromophenylphenylethe												
r												
4-Chloro-3-	U	ND	3.00	10.0	ug/L	0.001	1					
methylphenol												
4-Chloroaniline	U	ND	3.30	10.0	ug/L	0.001	1					
4-	U	ND	3.00	10.0	ug/L	0.001	1					
Chlorophenylphenylethe												
r												
4-Nitrophenol	U	ND	3.00	10.0	ug/L	0.001	1					
Acenaphthene	U	ND	0.300	1.00	ug/L	0.001	1					
Acenaphthylene	U	ND	0.300	1.00	ug/L	0.001	1					
Acetophenone	U	ND	3.00	10.0	ug/L	0.001	1					
Anthracene	U	ND	0.300	1.00	ug/L	0.001	1					
Atrazine	U	ND	3.00	10.0	ug/L	0.001	1					
Benzaldehyde	U	ND	3.00	10.0	ug/L	0.001	1					
Benzo(a)anthracene	U	ND	0.300	1.00	ug/L	0.001	1					
Benzo(a)pyrene	U	ND	0.300	1.00	ug/L	0.001	1					
Benzo(b)fluoranthene	U	ND	0.300	1.00	ug/L	0.001	1					
Benzo(ghi)perylene	U	ND	0.300	1.00	ug/L	0.001	1					
Benzo(k)fluoranthene	U	ND	0.300	1.00	ug/L	0.001	1					
Butylbenzylphthalate	U	ND	3.00	10.0	ug/L	0.001	1					

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E
Sample ID: 431203001

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
<i>SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"</i>												
Caprolactam	U	ND	3.00	10.0	ug/L	0.001	1					
Carbazole	U	ND	0.300	1.00	ug/L	0.001	1					
Chrysene	U	ND	0.300	1.00	ug/L	0.001	1					
Di-n-butylphthalate	U	ND	3.00	10.0	ug/L	0.001	1					
Di-n-octylphthalate	U	ND	3.00	10.0	ug/L	0.001	1					
Dibenzo(a,h)anthracene	U	ND	0.300	1.00	ug/L	0.001	1					
Dibenzofuran	U	ND	3.00	10.0	ug/L	0.001	1					
Diethylphthalate	U	ND	3.00	10.0	ug/L	0.001	1					
Dimethylphthalate	U	ND	3.00	10.0	ug/L	0.001	1					
Diphenylamine	U	ND	3.00	10.0	ug/L	0.001	1					
Fluoranthene	U	ND	0.300	1.00	ug/L	0.001	1					
Fluorene	U	ND	0.300	1.00	ug/L	0.001	1					
Hexachlorobenzene	U	ND	3.00	10.0	ug/L	0.001	1					
Hexachlorobutadiene	U	ND	3.00	10.0	ug/L	0.001	1					
Hexachlorocyclopentadiene	U	ND	3.00	10.0	ug/L	0.001	1					
Hexachloroethane	U	ND	3.00	10.0	ug/L	0.001	1					
Indeno(1,2,3-cd)pyrene	U	ND	0.300	1.00	ug/L	0.001	1					
Isophorone	U	ND	3.50	10.0	ug/L	0.001	1					
N-Nitrosodipropylamine	U	ND	3.00	10.0	ug/L	0.001	1					
Naphthalene	U	ND	0.300	1.00	ug/L	0.001	1					
Nitrobenzene	U	ND	3.00	10.0	ug/L	0.001	1					
Pentachlorophenol	U	ND	3.00	10.0	ug/L	0.001	1					
Phenanthrene	U	ND	0.300	1.00	ug/L	0.001	1					
Phenol	U	ND	3.00	10.0	ug/L	0.001	1					
Pyrene	U	ND	0.300	1.00	ug/L	0.001	1					
bis(2-Chloro-1-methylethyl)ether	U	ND	3.00	10.0	ug/L	0.001	1					
bis(2-Chloroethoxy)methane	U	ND	3.00	10.0	ug/L	0.001	1					
bis(2-Chloroethyl) ether	U	ND	3.00	10.0	ug/L	0.001	1					
bis(2-Ethylhexyl)phthalate	U	ND	3.00	10.0	ug/L	0.001	1					
m,p-Cresols	U	ND	3.70	10.0	ug/L	0.001	1					
m-Nitroaniline	U	ND	3.00	10.0	ug/L	0.001	1					
o-Cresol	U	ND	3.00	10.0	ug/L	0.001	1					
o-Nitroaniline	U	ND	3.00	10.0	ug/L	0.001	1					
p-Nitroaniline	U	ND	3.00	10.0	ug/L	0.001	1					

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Sewer
Address : 516 Village Road, NE
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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E
Sample ID: 431203001

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Semi-Volatile-GC/MS

SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits	Date Time:	08/25/17 19 59
Phenol-d5	23.0 ug/L	100	23	(15%-91%)		
2-Fluorobiphenyl	34.7 ug/L	50.0	69	(32%-112%)		
Nitrobenzene-d5	36.9 ug/L	50.0	74	(36%-115%)		
2-Fluorophenol	37.7 ug/L	100	38	(15%-88%)		
p-Terphenyl-d14	56.6 ug/L	50.0	113	(36%-121%)		
2,4,6-Tribromophenol	78.1 ug/L	100	78	(32%-124%)		

Tentatively Identified Compound (TIC)	CAS No.	RT	Est. Concentration	Fit	Qual	Date Time:	08/25/17 19 59
unknown		2.096	11.7 ug/L	0	J		
3-Penten-2-ol	001569-50-2	2.261	9.75 ug/L	86	NJ		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	08/22/17	1430	1694306
SW846 3510C	3510C BNA Liq. Prep-8270 Analysis	DXF4	08/25/17	0435	1694953

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	
3	EPA 537	
4	SW846 3510C/8270D	

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

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Certificate of Analysis

Company : H2GO Brunswick Regional Water &
Sewer
Address : 516 Village Road, NE
Leland, North Carolina 28451
Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E Trip Blank
Sample ID: 431203002
Matrix: Water
Collect Date: 21-AUG-17 10:50
Receive Date: 22-AUG-17
Collector: Client

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>NC 6 PFCs by LC-MS/MS "As Received"</i>												
Nafion Byproduct 1	UX	ND			ng/L	0.0197	1	JLS	09/08/17	1348	1698648	1
Nafion Byproduct 2	UX	ND			ng/L	0.0197	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	UX	ND			ng/L	0.0197	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0197	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	UX	ND			ng/L	0.0197	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0197	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	UX	ND			ng/L	0.0197	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	UX	ND			ng/L	0.0197	1					
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	U	ND	0.651	1.97	ng/L	0.0197	1	JLS	08/24/17	0511	1694307	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.30	3.71	ng/L	0.0197	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.30	3.75	ng/L	0.0197	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.30	3.79	ng/L	0.0197	1					
Perfluorobutanesulfonate (PFBS)	U	ND	0.651	1.75	ng/L	0.0197	1					
Perfluorobutyric acid	U	ND	0.651	1.97	ng/L	0.0197	1					

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E Trip Blank
Sample ID: 431203002

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
(PFBA)												
Perfluorodecanesulfonate (PFDS)	U	ND	0.651	1.91	ng/L	0.0197	1					
Perfluorodecanoic acid (PFDA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.651	1.87	ng/L	0.0197	1					
Perfluoroheptanoic acid (PFHpA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorohexanesulfonate (PFHxS)	U	ND	0.651	1.79	ng/L	0.0197	1					
Perfluorohexanoic acid (PFHxA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.651	1.89	ng/L	0.0197	1					
Perfluorononanoic acid (PFNA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.651	1.83	ng/L	0.0197	1					
Perfluorooctanesulfonate (PFOS)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorooctanoic acid (PFOA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluoropentanesulfonate (PFPeS)	U	ND	0.651	1.85	ng/L	0.0197	1					
Perfluoropentanoic acid (PFPeA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.651	1.97	ng/L	0.0197	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.651	1.97	ng/L	0.0197	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	08/22/17	1430	1694306

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: HUSK E Trip Blank
Sample ID: 431203002

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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The following Analytical Methods were performed

Method	Description	Analyst	Comments
1	EPA 537		
2	EPA 537		

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

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Certificate of Analysis

Company : H2GO Brunswick Regional Water & Sewer

Address : 516 Village Road, NE
Leland, North Carolina 28451

Report Date: October 6, 2017

Contact: Bob Walker

Project: **Sample Analysis**

Client Sample ID: Buckeye Vault
Sample ID: 431203003
Matrix: Water
Collect Date: 21-AUG-17 09:05
Receive Date: 22-AUG-17
Collector: Client

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>NC 6 PFCs by LC-MS/MS "As Received"</i>												
Nafion Byproduct 1	X	8.24			ng/L	0.0184	5	JLS	09/08/17	1410	1698648	1
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	X	53.8			ng/L	0.0184	5					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	X	22.0			ng/L	0.0184	5					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	X	43.6			ng/L	0.0184	5					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0184	5					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	X	10.3			ng/L	0.0184	5					
Perfluoro-4-methoxybutanic acid (PFMOBA)	X	3.03			ng/L	0.0184	5					
Nafion Byproduct 2	X	67.6			ng/L	0.0184	5	JLS	09/09/17	1331	1698648	2
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.21	3.45	ng/L	0.0184	1	JLS	08/24/17	0533	1694307	3
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.21	3.49	ng/L	0.0184	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.21	3.52	ng/L	0.0184	1					
Perfluorobutanesulfonate (PFBS)		4.55	0.606	1.63	ng/L	0.0184	1					
Perfluorobutyric acid (PFBA)		14.9	0.606	1.84	ng/L	0.0184	1					
Perfluorodecanesulfonate (PFDS)	U	ND	0.606	1.78	ng/L	0.0184	1					
Perfluorodecanoic acid (PFDA)		2.02	0.606	1.84	ng/L	0.0184	1					

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Certificate of Analysis

Company : H2GO Brunswick Regional Water &
Sewer
Address : 516 Village Road, NE
Leland, North Carolina 28451
Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault
Sample ID: 431203003

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
Perfluorododecanoic acid (PFDoA)	U	ND	0.606	1.84	ng/L	0.0184	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.606	1.74	ng/L	0.0184	1					
Perfluoroheptanoic acid (PFHpA)		21.8	0.606	1.84	ng/L	0.0184	1					
Perfluorohexanesulfonate (PFHxS)		6.49	0.606	1.67	ng/L	0.0184	1					
Perfluorohexanoic acid (PFHxA)		34.2	0.606	1.84	ng/L	0.0184	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.606	1.76	ng/L	0.0184	1					
Perfluorononanoic acid (PFNA)		2.87	0.606	1.84	ng/L	0.0184	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.606	1.71	ng/L	0.0184	1					
Perfluorooctanesulfonate (PFOS)		12.4	0.606	1.84	ng/L	0.0184	1					
Perfluorooctanoic acid (PFOA)		14.1	0.606	1.84	ng/L	0.0184	1					
Perfluoropentanesulfonate (PFPeS)	J	1.09	0.606	1.73	ng/L	0.0184	1					
Perfluoropentanoic acid (PFPeA)		36.0	0.606	1.84	ng/L	0.0184	1					
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.606	1.84	ng/L	0.0184	1					
Perfluorotridecanoic acid (PFTTrDA)	U	ND	0.606	1.84	ng/L	0.0184	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.606	1.84	ng/L	0.0184	1					
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)		56.6	3.03	9.18	ng/L	0.0184	5	JLS	08/24/17	1253	1694307	4
Semi-Volatile-GC/MS												
<i>SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"</i>												
1,1'-Biphenyl	U	ND	2.88	9.62	ug/L	0.000962	1	AGS1	08/25/17	2028	1694954	5
1,2,4,5-	U	ND	2.88	9.62	ug/L	0.000962	1					

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Certificate of Analysis

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault
Sample ID: 431203003

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
<i>SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"</i>												
Tetrachlorobenzene												
2,3,4,6-	U	ND	2.88	9.62	ug/L	0.000962	1					
Tetrachlorophenol												
2,4,5-Trichlorophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
2,4,6-Trichlorophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
2,4-Dichlorophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
2,4-Dimethylphenol	U	ND	2.88	9.62	ug/L	0.000962	1					
2,4-Dinitrophenol	U	ND	4.81	19.2	ug/L	0.000962	1					
2,4-Dinitrotoluene	U	ND	2.88	9.62	ug/L	0.000962	1					
2,6-Dinitrotoluene	U	ND	2.88	9.62	ug/L	0.000962	1					
2-Chloronaphthalene	U	ND	0.394	0.962	ug/L	0.000962	1					
2-Chlorophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
2-Methyl-4,6-	U	ND	2.88	9.62	ug/L	0.000962	1					
dinitrophenol												
2-Methylnaphthalene	U	ND	0.288	0.962	ug/L	0.000962	1					
2-Nitrophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
3,3'-Dichlorobenzidine	U	ND	2.88	9.62	ug/L	0.000962	1					
4-	U	ND	2.88	9.62	ug/L	0.000962	1					
Bromophenylphenylethe												
r												
4-Chloro-3-	U	ND	2.88	9.62	ug/L	0.000962	1					
methylphenol												
4-Chloroaniline	U	ND	3.17	9.62	ug/L	0.000962	1					
4-	U	ND	2.88	9.62	ug/L	0.000962	1					
Chlorophenylphenylethe												
r												
4-Nitrophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
Acenaphthene	U	ND	0.288	0.962	ug/L	0.000962	1					
Acenaphthylene	U	ND	0.288	0.962	ug/L	0.000962	1					
Acetophenone	U	ND	2.88	9.62	ug/L	0.000962	1					
Anthracene	U	ND	0.288	0.962	ug/L	0.000962	1					
Atrazine	U	ND	2.88	9.62	ug/L	0.000962	1					
Benzaldehyde	U	ND	2.88	9.62	ug/L	0.000962	1					
Benzo(a)anthracene	U	ND	0.288	0.962	ug/L	0.000962	1					
Benzo(a)pyrene	U	ND	0.288	0.962	ug/L	0.000962	1					
Benzo(b)fluoranthene	U	ND	0.288	0.962	ug/L	0.000962	1					
Benzo(ghi)perylene	U	ND	0.288	0.962	ug/L	0.000962	1					
Benzo(k)fluoranthene	U	ND	0.288	0.962	ug/L	0.000962	1					
Butylbenzylphthalate	U	ND	2.88	9.62	ug/L	0.000962	1					

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Certificate of Analysis

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Address : 516 Village Road, NE
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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault
Sample ID: 431203003

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
<i>SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"</i>												
Caprolactam	U	ND	2.88	9.62	ug/L	0.000962	1					
Carbazole	U	ND	0.288	0.962	ug/L	0.000962	1					
Chrysene	U	ND	0.288	0.962	ug/L	0.000962	1					
Di-n-butylphthalate	U	ND	2.88	9.62	ug/L	0.000962	1					
Di-n-octylphthalate	U	ND	2.88	9.62	ug/L	0.000962	1					
Dibenzo(a,h)anthracene	U	ND	0.288	0.962	ug/L	0.000962	1					
Dibenzofuran	U	ND	2.88	9.62	ug/L	0.000962	1					
Diethylphthalate	U	ND	2.88	9.62	ug/L	0.000962	1					
Dimethylphthalate	U	ND	2.88	9.62	ug/L	0.000962	1					
Diphenylamine	U	ND	2.88	9.62	ug/L	0.000962	1					
Fluoranthene	U	ND	0.288	0.962	ug/L	0.000962	1					
Fluorene	U	ND	0.288	0.962	ug/L	0.000962	1					
Hexachlorobenzene	U	ND	2.88	9.62	ug/L	0.000962	1					
Hexachlorobutadiene	U	ND	2.88	9.62	ug/L	0.000962	1					
Hexachlorocyclopentadiene	U	ND	2.88	9.62	ug/L	0.000962	1					
Hexachloroethane	U	ND	2.88	9.62	ug/L	0.000962	1					
Indeno(1,2,3-cd)pyrene	U	ND	0.288	0.962	ug/L	0.000962	1					
Isophorone	U	ND	3.37	9.62	ug/L	0.000962	1					
N-Nitrosodipropylamine	U	ND	2.88	9.62	ug/L	0.000962	1					
Naphthalene	U	ND	0.288	0.962	ug/L	0.000962	1					
Nitrobenzene	U	ND	2.88	9.62	ug/L	0.000962	1					
Pentachlorophenol	U	ND	2.88	9.62	ug/L	0.000962	1					
Phenanthrene	U	ND	0.288	0.962	ug/L	0.000962	1					
Phenol	U	ND	2.88	9.62	ug/L	0.000962	1					
Pyrene	U	ND	0.288	0.962	ug/L	0.000962	1					
bis(2-Chloro-1-methylethyl)ether	U	ND	2.88	9.62	ug/L	0.000962	1					
bis(2-Chloroethoxy)methane	U	ND	2.88	9.62	ug/L	0.000962	1					
bis(2-Chloroethyl) ether	U	ND	2.88	9.62	ug/L	0.000962	1					
bis(2-Ethylhexyl)phthalate	U	ND	2.88	9.62	ug/L	0.000962	1					
m,p-Cresols	U	ND	3.56	9.62	ug/L	0.000962	1					
m-Nitroaniline	U	ND	2.88	9.62	ug/L	0.000962	1					
o-Cresol	U	ND	2.88	9.62	ug/L	0.000962	1					
o-Nitroaniline	U	ND	2.88	9.62	ug/L	0.000962	1					
p-Nitroaniline	U	ND	2.88	9.62	ug/L	0.000962	1					

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Certificate of Analysis

Company : H2GO Brunswick Regional Water &
Sewer
Address : 516 Village Road, NE
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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault
Sample ID: 431203003

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Semi-Volatile-GC/MS

SW846 3510C/8270D SVOA (Separatory Funnel) "As Received"

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits	Date Time:	08/25/17 20 28
Nitrobenzene-d5	27.9 ug/L	48.1	58	(36%-115%)		
2-Fluorophenol	28.5 ug/L	96.2	30	(15%-88%)		
2-Fluorobiphenyl	30.4 ug/L	48.1	63	(32%-112%)		
p-Terphenyl-d14	37.9 ug/L	48.1	79	(36%-121%)		
Phenol-d5	7.07 ug/L	96.2	7	(15%-91%)	*	
2,4,6-Tribromophenol	70.0 ug/L	96.2	73	(32%-124%)		

Tentatively Identified Compound (TIC)	CAS No.	RT	Est. Concentration	Fit	Qual	Date Time:	08/25/17 20 28
unknown		2.093	10.8 ug/L	0	J		
3-Methyl-3-chloro-1-butene	002190-48-9	2.341	13.9 ug/L	86	NJ		
unknown		3.429	55.8 ug/L	0	J		
unknown		3.642	3.9 ug/L	0	J		
unknown		4.312	9.75 ug/L	0	J		
unknown		4.668	5.12 ug/L	0	J		
unknown		20.918	104 ug/L	0	J		
unknown		21.659	193 ug/L	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	08/22/17	1430	1694306
SW846 3510C	3510C BNA Liq. Prep-8270 Analysis	DXF4	08/25/17	0435	1694953

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	
3	EPA 537	
4	EPA 537	
5	SW846 3510C/8270D	

Notes:

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Certificate of Analysis

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault
Sample ID: 431203003

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Company : H2GO Brunswick Regional Water & Sewer

Address : 516 Village Road, NE
Leland, North Carolina 28451

Report Date: October 6, 2017

Contact: Bob Walker

Project: **Sample Analysis**

Client Sample ID: Buckeye Vault Trip Blank
Sample ID: 431203004
Matrix: Water
Collect Date: 21-AUG-17 09:05
Receive Date: 22-AUG-17
Collector: Client

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>NC 6 PFCs by LC-MS/MS "As Received"</i>												
Nafion Byproduct 1	UX	ND			ng/L	0.0196	1	JLS	09/08/17	1431	1698648	1
Nafion Byproduct 2	UX	ND			ng/L	0.0196	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	UX	ND			ng/L	0.0196	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0196	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	UX	ND			ng/L	0.0196	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0196	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	UX	ND			ng/L	0.0196	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	UX	ND			ng/L	0.0196	1					
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	U	ND	0.647	1.96	ng/L	0.0196	1	JLS	08/24/17	0554	1694307	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.29	3.69	ng/L	0.0196	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.29	3.73	ng/L	0.0196	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.29	3.76	ng/L	0.0196	1					
Perfluorobutanesulfonate (PFBS)	U	ND	0.647	1.75	ng/L	0.0196	1					
Perfluorobutyric acid	U	ND	0.647	1.96	ng/L	0.0196	1					

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Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault Trip Blank
Sample ID: 431203004
Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
<i>PFOA, PFOS by LC-MS/MS "As Received"</i>												
(PFBA)												
Perfluorodecanesulfonate (PFDS)	U	ND	0.647	1.90	ng/L	0.0196	1					
Perfluorodecanoic acid (PFDA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.647	1.86	ng/L	0.0196	1					
Perfluoroheptanoic acid (PFHpA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorohexanesulfonate (PFHxS)	U	ND	0.647	1.78	ng/L	0.0196	1					
Perfluorohexanoic acid (PFHxA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.647	1.88	ng/L	0.0196	1					
Perfluorononanoic acid (PFNA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.647	1.82	ng/L	0.0196	1					
Perfluorooctanesulfonate (PFOS)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorooctanoic acid (PFOA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluoropentanesulfonate (PFPeS)	U	ND	0.647	1.84	ng/L	0.0196	1					
Perfluoropentanoic acid (PFPeA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.647	1.96	ng/L	0.0196	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.647	1.96	ng/L	0.0196	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	08/22/17	1430	1694306

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Certificate of Analysis

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Address : 516 Village Road, NE
Leland, North Carolina 28451
Contact: Bob Walker
Project: **Sample Analysis**

Report Date: October 6, 2017

Client Sample ID: Buckeye Vault Trip Blank
Sample ID: 431203004

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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The following Analytical Methods were performed

Method	Description	Analyst	Comments
1	EPA 537		
2	EPA 537		

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

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QC Summary

Report Date: October 6, 2017

Page 1 of 35

H2GO Brunswick Regional Water & Sewer
516 Village Road, NE
Leland, North Carolina

Contact: Bob Walker

Workorder: 431203

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch	1694307										
QC1203860008 LCS											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	19.8			22.4	ng/L		113	(70%-130%)	JLS	08/24/17	01:16
Fluorotelomer sulfonate 4:2 (4:2 FTS)	18.5			19.0	ng/L		102	(70%-130%)			
Fluorotelomer sulfonate 6:2 (6:2 FTS)	18.8			22.5	ng/L		119	(70%-130%)			
Fluorotelomer sulfonate 8:2 (8:2 FTS)	19.0			18.4	ng/L		97	(70%-130%)			
Perfluorobutanesulfonate (PFBS)	17.5			18.3	ng/L		105	(70%-130%)			
Perfluorobutyric acid (PFBA)	19.8			19.7	ng/L		100	(70%-130%)			
Perfluorodecanesulfonate (PFDS)	19.1			19.1	ng/L		100	(70%-130%)			
Perfluorodecanoic acid (PFDA)	19.8			21.9	ng/L		111	(70%-130%)			
Perfluorododecanoic acid (PFDoA)	19.8			19.5	ng/L		98	(70%-130%)			
Perfluoroheptanesulfonate (PFHpS)	18.8			19.4	ng/L		103	(70%-130%)			
Perfluoroheptanoic acid (PFHpA)	19.8			20.5	ng/L		103	(70%-130%)			
Perfluorohexanesulfonate (PFHxS)	18.1			18.9	ng/L		105	(70%-130%)			
Perfluorohexanoic acid (PFHxA)	19.8			19.6	ng/L		99	(70%-130%)			

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QC Summary

Workorder: 431203

Page 2 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1694307											
Perfluorononanesulfonate (PFNS)	19.0			19.5	ng/L		102	(70%-130%)	JLS	08/24/17	01:16
Perfluorononanoic acid (PFNA)	19.8			21.1	ng/L		106	(70%-130%)			
Perfluorooctanesulfonamide (PFOSA)	18.3			18.8	ng/L		103	(70%-130%)			
Perfluorooctanesulfonate (PFOS)	19.8			19.0	ng/L		96	(70%-130%)			
Perfluorooctanoic acid (PFOA)	19.8			19.7	ng/L		99	(70%-130%)			
Perfluoropentanesulfonate (PFPeS)	18.6			19.2	ng/L		103	(70%-130%)			
Perfluoropentanoic acid (PFPeA)	19.8			20.3	ng/L		102	(70%-130%)			
Perfluorotetradecanoic acid (PFTeDA)	19.8			20.5	ng/L		103	(70%-130%)			
Perfluorotridecanoic acid (PFTrDA)	19.8			18.2	ng/L		92	(70%-130%)			
Perfluoroundecanoic acid (PFUdA)	19.8			18.8	ng/L		95	(70%-130%)			
QC1203860009 LCSD											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	19.8			23.0	ng/L	3	116	(0%-30%)		08/24/17	01:37
Fluorotelomer sulfonate 4:2 (4:2 FTS)	18.5			21.3	ng/L	12	115	(0%-30%)			
Fluorotelomer sulfonate 6:2 (6:2 FTS)	18.8			20.3	ng/L	10	108	(0%-30%)			
Fluorotelomer sulfonate 8:2 (8:2 FTS)	19.0			17.8	ng/L	3	94	(0%-30%)			
Perfluorobutanesulfonate (PFBS)	17.5			18.0	ng/L	2	103	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 3 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch	1694307										
Perfluorobutyric acid (PFBA)	19.8			19.9	ng/L	1	101	(0%-30%)	JLS	08/24/17	01:37
Perfluorodecanesulfonate (PFDS)	19.1			18.2	ng/L	5	95	(0%-30%)			
Perfluorodecanoic acid (PFDA)	19.8			19.0	ng/L	14	96	(0%-30%)			
Perfluorododecanoic acid (PFDoA)	19.8			20.1	ng/L	3	102	(0%-30%)			
Perfluoroheptanesulfonate (PFHpS)	18.8			20.2	ng/L	4	107	(0%-30%)			
Perfluoroheptanoic acid (PFHpA)	19.8			20.4	ng/L	1	103	(0%-30%)			
Perfluorohexanesulfonate (PFHxS)	18.1			19.9	ng/L	5	110	(0%-30%)			
Perfluorohexanoic acid (PFHxA)	19.8			19.6	ng/L	0	99	(0%-30%)			
Perfluorononanesulfonate (PFNS)	19.0			17.8	ng/L	9	94	(0%-30%)			
Perfluorononanoic acid (PFNA)	19.8			20.5	ng/L	3	104	(0%-30%)			
Perfluorooctanesulfonamide (PFOSA)	18.3			18.1	ng/L	4	99	(0%-30%)			
Perfluorooctanesulfonate (PFOS)	19.8			18.1	ng/L	5	92	(0%-30%)			
Perfluorooctanoic acid (PFOA)	19.8			19.3	ng/L	2	97	(0%-30%)			
Perfluoropentanesulfonate (PFPeS)	18.6			20.0	ng/L	4	108	(0%-30%)			
Perfluoropentanoic acid (PFPeA)	19.8			19.6	ng/L	4	99	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 4 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1694307											
Perfluorotetradecanoic acid (PFTeDA)	19.8			19.8	ng/L	4	100	(0%-30%)	JLS	08/24/17	01:37
Perfluorotridecanoic acid (PFTrDA)	19.8			19.7	ng/L	8	100	(0%-30%)			
Perfluoroundecanoic acid (PFUdA)	19.8			20.4	ng/L	8	103	(0%-30%)			
QC1203860007 MB											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)			U	ND	ng/L					08/24/17	00:54
Fluorotelomer sulfonate 4:2 (4:2 FTS)			U	ND	ng/L						
Fluorotelomer sulfonate 6:2 (6:2 FTS)			U	ND	ng/L						
Fluorotelomer sulfonate 8:2 (8:2 FTS)			U	ND	ng/L						
Perfluorobutanesulfonate (PFBS)			U	ND	ng/L						
Perfluorobutyric acid (PFBA)			U	ND	ng/L						
Perfluorodecanesulfonate (PFDS)			U	ND	ng/L						
Perfluorodecanoic acid (PFDA)			U	ND	ng/L						
Perfluorododecanoic acid (PFDoA)			U	ND	ng/L						
Perfluoroheptanesulfonate (PFHpS)			U	ND	ng/L						
Perfluoroheptanoic acid (PFHpA)			U	ND	ng/L						
Perfluorohexanesulfonate (PFHxS)			U	ND	ng/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 5 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch	1694307										
Perfluorohexanoic acid (PFHxA)			U	ND	ng/L				JLS	08/24/17	00:54
Perfluorononanesulfonate (PFNS)			U	ND	ng/L						
Perfluorononanoic acid (PFNA)			U	ND	ng/L						
Perfluorooctanesulfonamide (PFOSA)			U	ND	ng/L						
Perfluorooctanesulfonate (PFOS)			U	ND	ng/L						
Perfluorooctanoic acid (PFOA)			U	ND	ng/L						
Perfluoropentanesulfonate (PFPeS)			U	ND	ng/L						
Perfluoropentanoic acid (PFPeA)			U	ND	ng/L						
Perfluorotetradecanoic acid (PFTeDA)			U	ND	ng/L						
Perfluorotridecanoic acid (PFTrDA)			U	ND	ng/L						
Perfluoroundecanoic acid (PFUdA)			U	ND	ng/L						
Semi-Volatile-GC/MS											
Batch	1694954										
QC1203861267	LCS										
1,1'-Biphenyl	50.0			38.6	ug/L		77	(46%-110%)	AGS1	08/25/17	19:02
1,2,4,5-Tetrachlorobenzene	50.0			40.2	ug/L		80	(44%-102%)			
2,3,4,6-Tetrachlorophenol	50.0			42.5	ug/L		85	(54%-122%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 6 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
2,4,5-Trichlorophenol	50.0			49.2	ug/L		98	(55%-116%)	AGS1	08/25/17	19:02
2,4,6-Trichlorophenol	50.0			44.1	ug/L		88	(55%-120%)			
2,4-Dichlorophenol	50.0			44.1	ug/L		88	(53%-109%)			
2,4-Dimethylphenol	50.0			36.1	ug/L		72	(51%-104%)			
2,4-Dinitrophenol	50.0			22.4	ug/L		45	(34%-122%)			
2,4-Dinitrotoluene	50.0			41.6	ug/L		83	(57%-124%)			
2,6-Dinitrotoluene	50.0			41.5	ug/L		83	(59%-122%)			
2-Chloronaphthalene	50.0			37.0	ug/L		74	(44%-107%)			
2-Chlorophenol	50.0			40.9	ug/L		82	(49%-105%)			
2-Methyl-4,6-dinitrophenol	50.0			31.9	ug/L		64	(45%-124%)			
2-Methylnaphthalene	50.0			36.4	ug/L		73	(42%-103%)			
2-Nitrophenol	50.0			39.6	ug/L		79	(51%-113%)			
3,3'-Dichlorobenzidine	50.0			32.0	ug/L		64	(43%-127%)			
4-Bromophenylphenylether	50.0			42.4	ug/L		85	(54%-116%)			
4-Chloro-3-methylphenol	50.0			46.9	ug/L		94	(55%-115%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 7 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
4-Chloroaniline	50.0			35.1	ug/L		70	(65%-136%)	AGS1	08/25/17	19:02
4-Chlorophenylphenylether	50.0			41.5	ug/L		83	(52%-121%)			
4-Nitrophenol	50.0			28.7	ug/L		57	(15%-137%)			
Acenaphthene	50.0			39.7	ug/L		79	(49%-112%)			
Acenaphthylene	50.0			37.3	ug/L		75	(50%-113%)			
Acetophenone	50.0			42.0	ug/L		84	(55%-114%)			
Anthracene	50.0			37.8	ug/L		76	(56%-112%)			
Benzaldehyde	50.0			15.7	ug/L		31 *	(38%-113%)			
Benzo(a)anthracene	50.0			40.0	ug/L		80	(57%-112%)			
Benzo(a)pyrene	50.0			41.0	ug/L		82	(40%-118%)			
Benzo(b)fluoranthene	50.0			42.7	ug/L		85	(41%-118%)			
Benzo(ghi)perylene	50.0			38.1	ug/L		76	(33%-131%)			
Benzo(k)fluoranthene	50.0			42.9	ug/L		86	(42%-121%)			
Butylbenzylphthalate	50.0			48.4	ug/L		97	(52%-125%)			
Caprolactam	50.0			25.1	ug/L		50	(30%-61%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 8 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
Carbazole	50.0			38.0	ug/L		76	(56%-119%)	AGS1	08/25/17	19:02
Chrysene	50.0			39.9	ug/L		80	(58%-117%)			
Di-n-butylphthalate	50.0			41.6	ug/L		83	(57%-123%)			
Di-n-octylphthalate	50.0			39.3	ug/L		79	(50%-129%)			
Dibenzo(a,h)anthracene	50.0			40.3	ug/L		81	(38%-129%)			
Dibenzofuran	50.0			38.1	ug/L		76	(50%-111%)			
Diethylphthalate	50.0			40.9	ug/L		82	(57%-122%)			
Dimethylphthalate	50.0			41.1	ug/L		82	(60%-122%)			
Diphenylamine	50.0			42.0	ug/L		84	(55%-113%)			
Fluoranthene	50.0			35.0	ug/L		70	(54%-118%)			
Fluorene	50.0			38.9	ug/L		78	(52%-114%)			
Hexachlorobenzene	50.0			44.6	ug/L		89	(54%-115%)			
Hexachlorobutadiene	50.0			42.4	ug/L		85	(35%-98%)			
Hexachlorocyclopentadiene	50.0			16.5	ug/L		33 *	(34%-89%)			
Hexachloroethane	50.0			34.6	ug/L		69	(36%-96%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 9 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
Indeno(1,2,3-cd)pyrene	50.0			39.7	ug/L		79	(34%-125%)	AGS1	08/25/17	19:02
Isophorone	50.0			41.4	ug/L		83	(56%-117%)			
N-Nitrosodipropylamine	50.0			42.0	ug/L		84	(54%-115%)			
Naphthalene	50.0			37.1	ug/L		74	(44%-102%)			
Nitrobenzene	50.0			42.0	ug/L		84	(53%-115%)			
Pentachlorophenol	50.0			45.2	ug/L		90	(41%-116%)			
Phenanthrene	50.0			38.7	ug/L		77	(55%-110%)			
Phenol	50.0			29.3	ug/L		59	(16%-82%)			
Pyrene	50.0			51.2	ug/L		102	(49%-121%)			
bis(2-Chloro-1-methylethyl)ether	50.0			34.8	ug/L		70	(44%-123%)			
bis(2-Chloroethoxy)methane	50.0			40.1	ug/L		80	(55%-114%)			
bis(2-Chloroethyl) ether	50.0			40.0	ug/L		80	(51%-111%)			
bis(2-Ethylhexyl)phthalate	50.0			48.6	ug/L		97	(52%-125%)			
m,p-Cresols	50.0			43.0	ug/L		86	(43%-102%)			
m-Nitroaniline	50.0			37.3	ug/L		75	(61%-139%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 10 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
o-Cresol	50.0			37.5	ug/L		75	(41%-101%)	AGS1	08/25/17	19:02
o-Nitroaniline	50.0			37.3	ug/L		75	(53%-121%)			
p-Nitroaniline	50.0			42.3	ug/L		85	(44%-137%)			
**2,4,6-Tribromophenol	100			69.9	ug/L		70	(32%-124%)			
**2-Fluorobiphenyl	50.0			30.9	ug/L		62	(32%-112%)			
**2-Fluorophenol	100			53.7	ug/L		54	(15%-88%)			
**Nitrobenzene-d5	50.0			32.4	ug/L		65	(36%-115%)			
**Phenol-d5	100			47.0	ug/L		47	(15%-91%)			
**p-Terphenyl-d14	50.0			49.5	ug/L		99	(36%-121%)			
QC1203861266 MB											
1,1'-Biphenyl			U	ND	ug/L					08/25/17	17:36
1,2,4,5-Tetrachlorobenzene			U	ND	ug/L						
2,3,4,6-Tetrachlorophenol			U	ND	ug/L						
2,4,5-Trichlorophenol			U	ND	ug/L						
2,4,6-Trichlorophenol			U	ND	ug/L						
2,4-Dichlorophenol			U	ND	ug/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 11 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
2,4-Dimethylphenol			U	ND	ug/L				AGS1	08/25/17	17:36
2,4-Dinitrophenol			U	ND	ug/L						
2,4-Dinitrotoluene			U	ND	ug/L						
2,6-Dinitrotoluene			U	ND	ug/L						
2-Chloronaphthalene			U	ND	ug/L						
2-Chlorophenol			U	ND	ug/L						
2-Methyl-4,6-dinitrophenol			U	ND	ug/L						
2-Methylnaphthalene			U	ND	ug/L						
2-Nitrophenol			U	ND	ug/L						
3,3'-Dichlorobenzidine			U	ND	ug/L						
4-Bromophenylphenylether			U	ND	ug/L						
4-Chloro-3-methylphenol			U	ND	ug/L						
4-Chloroaniline			U	ND	ug/L						
4-Chlorophenylphenylether			U	ND	ug/L						
4-Nitrophenol			U	ND	ug/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 12 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
Acenaphthene			U	ND	ug/L				AGS1	08/25/17	17:36
Acenaphthylene			U	ND	ug/L						
Acetophenone			U	ND	ug/L						
Anthracene			U	ND	ug/L						
Atrazine			U	ND	ug/L						
Benzaldehyde			U	ND	ug/L						
Benzo(a)anthracene			U	ND	ug/L						
Benzo(a)pyrene			U	ND	ug/L						
Benzo(b)fluoranthene			U	ND	ug/L						
Benzo(ghi)perylene			U	ND	ug/L						
Benzo(k)fluoranthene			U	ND	ug/L						
Butylbenzylphthalate			U	ND	ug/L						
Caprolactam			U	ND	ug/L						
Carbazole			U	ND	ug/L						
Chrysene			U	ND	ug/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 13 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
Di-n-butylphthalate			U	ND	ug/L				AGS1	08/25/17	17:36
Di-n-octylphthalate			U	ND	ug/L						
Dibenzo(a,h)anthracene			U	ND	ug/L						
Dibenzofuran			U	ND	ug/L						
Diethylphthalate			U	ND	ug/L						
Dimethylphthalate			U	ND	ug/L						
Diphenylamine			U	ND	ug/L						
Fluoranthene			U	ND	ug/L						
Fluorene			U	ND	ug/L						
Hexachlorobenzene			U	ND	ug/L						
Hexachlorobutadiene			U	ND	ug/L						
Hexachlorocyclopentadiene			U	ND	ug/L						
Hexachloroethane			U	ND	ug/L						
Indeno(1,2,3-cd)pyrene			U	ND	ug/L						
Isophorone			U	ND	ug/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 14 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
N-Nitrosodipropylamine			U	ND	ug/L				AGS1	08/25/17	17:36
Naphthalene			U	ND	ug/L						
Nitrobenzene			U	ND	ug/L						
Pentachlorophenol			U	ND	ug/L						
Phenanthrene			U	ND	ug/L						
Phenol			U	ND	ug/L						
Pyrene			U	ND	ug/L						
bis(2-Chloro-1-methylethyl)ether			U	ND	ug/L						
bis(2-Chloroethoxy)methane			U	ND	ug/L						
bis(2-Chloroethyl) ether			U	ND	ug/L						
bis(2-Ethylhexyl)phthalate			U	ND	ug/L						
m,p-Cresols			U	ND	ug/L						
m-Nitroaniline			U	ND	ug/L						
o-Cresol			U	ND	ug/L						
o-Nitroaniline			U	ND	ug/L						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 15 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
p-Nitroaniline			U	ND	ug/L				AGS1	08/25/17	17:36
**2,4,6-Tribromophenol	100			82.0	ug/L		82	(32%-124%)			
**2-Fluorobiphenyl	50.0			36.9	ug/L		74	(32%-112%)			
**2-Fluorophenol	100			45.2	ug/L		45	(15%-88%)			
**Nitrobenzene-d5	50.0			41.1	ug/L		82	(36%-115%)			
**Phenol-d5	100			27.5	ug/L		27	(15%-91%)			
**p-Terphenyl-d14	50.0			56.3	ug/L		113	(36%-121%)			
QC1203861268 431410003 MS											
1,1'-Biphenyl	100	U	ND	95.9	ug/L		96	(35%-113%)		08/28/17	21:43
1,2,4,5-Tetrachlorobenzene	100	U	ND	99.9	ug/L		100	(32%-101%)			
2,3,4,6-Tetrachlorophenol	100	U	ND	104	ug/L		104	(40%-128%)			
2,4,5-Trichlorophenol	100	U	ND	112	ug/L		112	(42%-120%)			
2,4,6-Trichlorophenol	100	U	ND	103	ug/L		103	(39%-124%)			
2,4-Dichlorophenol	100	U	ND	105	ug/L		105	(40%-111%)			
2,4-Dimethylphenol	100	U	ND	76.6	ug/L		77	(39%-107%)			
2,4-Dinitrophenol	100	U	ND	69.8	ug/L		70	(27%-122%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 16 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
2,4-Dinitrotoluene	100	U	ND		102	ug/L		102	(45%-125%)	AGS1	08/28/17	21:43
2,6-Dinitrotoluene	100	U	ND		104	ug/L		104	(46%-124%)			
2-Chloronaphthalene	100	J	0.540		89.4	ug/L		89	(29%-113%)			
2-Chlorophenol	100	U	ND		94.3	ug/L		94	(37%-108%)			
2-Methyl-4,6-dinitrophenol	100	U	ND		103	ug/L		103	(32%-126%)			
2-Methylnaphthalene	100	J	0.390		91.1	ug/L		91	(29%-109%)			
2-Nitrophenol	100	U	ND		96.7	ug/L		97	(39%-115%)			
3,3'-Dichlorobenzidine	100	U	ND		51.4	ug/L		51	(34%-124%)			
4-Bromophenylphenylether	100	U	ND		109	ug/L		109	(39%-121%)			
4-Chloro-3-methylphenol	100	U	ND		112	ug/L		112	(41%-122%)			
4-Chloroaniline	100	U	ND		87.6	ug/L		88	(44%-138%)			
4-Chlorophenylphenylether	100	U	ND		107	ug/L		107	(39%-121%)			
4-Nitrophenol	100	U	ND		47.2	ug/L		47	(17%-85%)			
Acenaphthene	100	J	0.950		99.9	ug/L		99	(35%-117%)			
Acenaphthylene	100	J	0.730		93.5	ug/L		93	(35%-120%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 17 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Acetophenone	100	U	ND		105	ug/L		105	(41%-119%)	AGS1	08/28/17	21:43
Anthracene	100		1.04		98.8	ug/L		98	(38%-120%)			
Atrazine	100	U	ND		119	ug/L		119	(42%-129%)			
Benzaldehyde	100	U	ND		72.6	ug/L		73	(28%-112%)			
Benzo(a)anthracene	100		1.21		98.4	ug/L		97	(39%-120%)			
Benzo(a)pyrene	100		1.09		100	ug/L		99	(32%-118%)			
Benzo(b)fluoranthene	100		1.14		100	ug/L		99	(31%-122%)			
Benzo(ghi)perylene	100		1.08		96.6	ug/L		96	(24%-126%)			
Benzo(k)fluoranthene	100		1.26		103	ug/L		102	(33%-123%)			
Butylbenzylphthalate	100	U	ND		100	ug/L		99	(40%-129%)			
Caprolactam	100	U	ND		42.7	ug/L		43	(25%-79%)			
Carbazole	100		1.13		60.7	ug/L		60	(37%-125%)			
Chrysene	100		1.21		100	ug/L		99	(41%-124%)			
Di-n-butylphthalate	100	U	ND		118	ug/L		117	(41%-128%)			
Di-n-octylphthalate	100	U	ND		102	ug/L		101	(37%-134%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 18 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Dibenzo(a,h)anthracene	100		1.07		102	ug/L		101	(30%-125%)	AGS1	08/28/17	21:43
Dibenzofuran	100	U	ND		94.8	ug/L		95	(38%-113%)			
Diethylphthalate	100	U	ND		105	ug/L		104	(43%-127%)			
Dimethylphthalate	100	U	ND		105	ug/L		104	(45%-128%)			
Diphenylamine	100	U	ND		102	ug/L		102	(37%-118%)			
Fluoranthene	100		1.14		101	ug/L		100	(41%-119%)			
Fluorene	100	J	0.980		96.9	ug/L		96	(39%-117%)			
Hexachlorobenzene	100	U	ND		120	ug/L		120 *	(40%-118%)			
Hexachlorobutadiene	100	U	ND		103	ug/L		103 *	(26%-98%)			
Hexachlorocyclopentadiene	100	U	ND		61.3	ug/L		61	(26%-79%)			
Hexachloroethane	100	U	ND		87.7	ug/L		88	(29%-94%)			
Indeno(1,2,3-cd)pyrene	100		1.06		98.9	ug/L		98	(27%-121%)			
Isophorone	100	U	ND		113	ug/L		113	(43%-120%)			
N-Nitrosodipropylamine	100	U	ND		110	ug/L		110	(42%-118%)			
Naphthalene	100	U	ND		95.1	ug/L		95	(31%-108%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 19 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Nitrobenzene	100	U	ND		106	ug/L		106	(38%-123%)	AGS1	08/28/17	21:43
Pentachlorophenol	100	U	ND		126	ug/L		126 *	(35%-121%)			
Phenanthrene	100		1.15		101	ug/L		100	(40%-115%)			
Phenol	100	U	ND		50.7	ug/L		51	(23%-82%)			
Pyrene	100		1.09		95.6	ug/L		94	(35%-128%)			
bis(2-Chloro-1-methylethyl)ether	100	U	ND		94.8	ug/L		95	(32%-127%)			
bis(2-Chloroethoxy)methane	100	U	ND		101	ug/L		101	(42%-118%)			
bis(2-Chloroethyl) ether	100	U	ND		100	ug/L		100	(39%-114%)			
bis(2-Ethylhexyl)phthalate	100	U	ND		108	ug/L		106	(38%-131%)			
m,p-Cresols	100	U	ND		92.6	ug/L		93	(36%-120%)			
m-Nitroaniline	100	U	ND		43.9	ug/L		44	(42%-144%)			
o-Cresol	100	U	ND		83.5	ug/L		84	(34%-109%)			
o-Nitroaniline	100	U	ND		91.6	ug/L		92	(41%-121%)			
p-Nitroaniline	100	U	ND		89.1	ug/L		89	(30%-133%)			
**2,4,6-Tribromophenol	200		73.9		199	ug/L		100	(32%-124%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 20 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1694954											
**2-Fluorobiphenyl	100	33.5		83.8	ug/L		84	(32%-112%)	AGS1	08/28/17	21:43
**2-Fluorophenol	200	33.3		122	ug/L		61	(15%-88%)			
**Nitrobenzene-d5	100	35.2		93.5	ug/L		94	(36%-115%)			
**Phenol-d5	200	21.2		92.7	ug/L		46	(15%-91%)			
**p-Terphenyl-d14	100	45.1		105	ug/L		105	(36%-121%)			
QC1203862494 431312003 MS											
1,1'-Biphenyl	111	U	ND	90.1	ug/L		81	(35%-113%)		08/25/17	22:51
1,2,4,5-Tetrachlorobenzene	111	U	ND	90.5	ug/L		81	(32%-101%)			
2,3,4,6-Tetrachlorophenol	111	U	ND	106	ug/L		96	(40%-128%)			
2,4,5-Trichlorophenol	111	U	ND	112	ug/L		101	(42%-120%)			
2,4,6-Trichlorophenol	111	U	ND	99.8	ug/L		90	(39%-124%)			
2,4-Dichlorophenol	111	U	ND	97.4	ug/L		88	(40%-111%)			
2,4-Dimethylphenol	111	U	ND	78.9	ug/L		71	(39%-107%)			
2,4-Dinitrophenol	111	U	ND	66.0	ug/L		59	(27%-122%)			
2,4-Dinitrotoluene	111	U	ND	104	ug/L		94	(45%-125%)			
2,6-Dinitrotoluene	111	U	ND	100	ug/L		90	(46%-124%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 21 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
2-Chloronaphthalene	111	U	ND		85.0	ug/L		76	(29%-113%)	AGS1	08/25/17	22:51
2-Chlorophenol	111	U	ND		87.4	ug/L		79	(37%-108%)			
2-Methyl-4,6-dinitrophenol	111	U	ND		86.4	ug/L		78	(32%-126%)			
2-Methylnaphthalene	111	U	ND		82.8	ug/L		75	(29%-109%)			
2-Nitrophenol	111	U	ND		89.2	ug/L		80	(39%-115%)			
3,3'-Dichlorobenzidine	111	U	ND		79.6	ug/L		72	(34%-124%)			
4-Bromophenylphenylether	111	U	ND		99.1	ug/L		89	(39%-121%)			
4-Chloro-3-methylphenol	111	U	ND		106	ug/L		95	(41%-122%)			
4-Chloroaniline	111	U	ND		110	ug/L		99	(44%-138%)			
4-Chlorophenylphenylether	111	U	ND		102	ug/L		92	(39%-121%)			
4-Nitrophenol	111	U	ND		59.0	ug/L		53	(17%-85%)			
Acenaphthene	111	U	ND		95.0	ug/L		85	(35%-117%)			
Acenaphthylene	111	U	ND		87.1	ug/L		78	(35%-120%)			
Acetophenone	111	U	ND		95.6	ug/L		86	(41%-119%)			
Anthracene	111	U	ND		92.5	ug/L		83	(38%-120%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 22 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Atrazine	111	U	ND		104	ug/L		94	(42%-129%)	AGS1	08/25/17	22:51
Benzaldehyde	111	U	ND		68.7	ug/L		62	(28%-112%)			
Benzo(a)anthracene	111	U	ND		93.5	ug/L		84	(39%-120%)			
Benzo(a)pyrene	111	U	ND		96.0	ug/L		86	(32%-118%)			
Benzo(b)fluoranthene	111	U	ND		99.6	ug/L		90	(31%-122%)			
Benzo(ghi)perylene	111	U	ND		86.0	ug/L		77	(24%-126%)			
Benzo(k)fluoranthene	111	U	ND		102	ug/L		92	(33%-123%)			
Butylbenzylphthalate	111	U	ND		105	ug/L		94	(40%-129%)			
Caprolactam	111	U	ND		43.9	ug/L		40	(25%-79%)			
Carbazole	111	U	ND		98.7	ug/L		89	(37%-125%)			
Chrysene	111	U	ND		93.4	ug/L		84	(41%-124%)			
Di-n-butylphthalate	111	U	ND		101	ug/L		91	(41%-128%)			
Di-n-octylphthalate	111	U	ND		97.0	ug/L		87	(37%-134%)			
Dibenzo(a,h)anthracene	111	U	ND		94.1	ug/L		85	(30%-125%)			
Dibenzofuran	111	U	ND		92.6	ug/L		83	(38%-113%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 23 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Diethylphthalate	111	U	ND		99.7	ug/L		90	(43%-127%)	AGS1	08/25/17	22:51
Dimethylphthalate	111	U	ND		98.7	ug/L		89	(45%-128%)			
Diphenylamine	111	U	ND		94.2	ug/L		85	(37%-118%)			
Fluoranthene	111	U	ND		93.5	ug/L		84	(41%-119%)			
Fluorene	111	U	ND		96.1	ug/L		86	(39%-117%)			
Hexachlorobenzene	111	U	ND		103	ug/L		93	(40%-118%)			
Hexachlorobutadiene	111	U	ND		89.1	ug/L		80	(26%-98%)			
Hexachlorocyclopentadiene	111	U	ND		39.7	ug/L		36	(26%-79%)			
Hexachloroethane	111	U	ND		72.9	ug/L		66	(29%-94%)			
Indeno(1,2,3-cd)pyrene	111	U	ND		89.8	ug/L		81	(27%-121%)			
Isophorone	111	U	ND		94.3	ug/L		85	(43%-120%)			
N-Nitrosodipropylamine	111	U	ND		94.8	ug/L		85	(42%-118%)			
Naphthalene	111	U	ND		82.8	ug/L		75	(31%-108%)			
Nitrobenzene	111	U	ND		93.4	ug/L		84	(38%-123%)			
Pentachlorophenol	111	U	ND		114	ug/L		103	(35%-121%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 24 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
Phenanthrene	111	U	ND	93.4	ug/L		84	(40%-115%)	AGS1	08/25/17	22:51
Phenol	111	U	ND	49.1	ug/L		44	(23%-82%)			
Pyrene	111	U	ND	109	ug/L		98	(35%-128%)			
bis(2-Chloro-1-methylethyl)ether	111	U	ND	75.9	ug/L		68	(32%-127%)			
bis(2-Chloroethoxy)methane	111	U	ND	91.2	ug/L		82	(42%-118%)			
bis(2-Chloroethyl) ether	111	U	ND	87.2	ug/L		78	(39%-114%)			
bis(2-Ethylhexyl)phthalate	111	U	ND	110	ug/L		99	(38%-131%)			
m,p-Cresols	111	U	ND	88.5	ug/L		80	(36%-120%)			
m-Nitroaniline	111	U	ND	110	ug/L		99	(42%-144%)			
o-Cresol	111	U	ND	80.1	ug/L		72	(34%-109%)			
o-Nitroaniline	111	U	ND	91.4	ug/L		82	(41%-121%)			
p-Nitroaniline	111	U	ND	115	ug/L		103	(30%-133%)			
**2,4,6-Tribromophenol	222		77.6	207	ug/L		93	(32%-124%)			
**2-Fluorobiphenyl	111		36.1	78.6	ug/L		71	(32%-112%)			
**2-Fluorophenol	222		36.1	115	ug/L		52	(15%-88%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 25 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
**Nitrobenzene-d5	111	37.7		83.5	ug/L		75	(36%-115%)	AGS1	08/25/17	22:51
**Phenol-d5	222	22.0		93.3	ug/L		42	(15%-91%)			
**p-Terphenyl-d14	111	57.9		124	ug/L		112	(36%-121%)			
QC1203861269 431410003 MSD											
1,1'-Biphenyl	100	U	ND	72.7	ug/L	27	73	(0%-30%)		08/28/17	22:12
1,2,4,5-Tetrachlorobenzene	100	U	ND	75.5	ug/L	28	75	(0%-30%)			
2,3,4,6-Tetrachlorophenol	100	U	ND	79.3	ug/L	27	79	(0%-30%)			
2,4,5-Trichlorophenol	100	U	ND	87.0	ug/L	25	87	(0%-30%)			
2,4,6-Trichlorophenol	100	U	ND	77.5	ug/L	28	77	(0%-30%)			
2,4-Dichlorophenol	100	U	ND	78.1	ug/L	29	78	(0%-30%)			
2,4-Dimethylphenol	100	U	ND	60.4	ug/L	24	60	(0%-30%)			
2,4-Dinitrophenol	100	U	ND	56.6	ug/L	21	57	(0%-30%)			
2,4-Dinitrotoluene	100	U	ND	76.7	ug/L	28	77	(0%-30%)			
2,6-Dinitrotoluene	100	U	ND	77.7	ug/L	29	78	(0%-30%)			
2-Chloronaphthalene	100	J	0.540	67.1	ug/L	29	67	(0%-30%)			
2-Chlorophenol	100	U	ND	75.1	ug/L	23	75	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 26 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
2-Methyl-4,6-dinitrophenol	100	U	ND		78.0	ug/L	27	78	(0%-30%)	AGS1	08/28/17	22:12
2-Methylnaphthalene	100	J	0.390		67.5	ug/L	30	67	(0%-30%)			
2-Nitrophenol	100	U	ND		70.8	ug/L	31*	71	(0%-30%)			
3,3'-Dichlorobenzidine	100	U	ND		46.2	ug/L	11	46	(0%-30%)			
4-Bromophenylphenylether	100	U	ND		82.7	ug/L	27	83	(0%-30%)			
4-Chloro-3-methylphenol	100	U	ND		81.8	ug/L	31*	82	(0%-30%)			
4-Chloroaniline	100	U	ND		76.2	ug/L	14	76	(0%-30%)			
4-Chlorophenylphenylether	100	U	ND		80.2	ug/L	28	80	(0%-30%)			
4-Nitrophenol	100	U	ND		40.7	ug/L	15	41	(0%-30%)			
Acenaphthene	100	J	0.950		74.6	ug/L	29	74	(0%-30%)			
Acenaphthylene	100	J	0.730		68.6	ug/L	31*	68	(0%-30%)			
Acetophenone	100	U	ND		81.4	ug/L	26	81	(0%-30%)			
Anthracene	100		1.04		72.7	ug/L	30	72	(0%-30%)			
Atrazine	100	U	ND		88.1	ug/L	29	88	(0%-30%)			
Benzaldehyde	100	U	ND		60.5	ug/L	18	61	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 27 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Benzo(a)anthracene	100		1.21		73.5	ug/L	29	72	(0%-30%)	AGS1	08/28/17	22:12
Benzo(a)pyrene	100		1.09		76.2	ug/L	27	75	(0%-30%)			
Benzo(b)fluoranthene	100		1.14		76.4	ug/L	27	75	(0%-30%)			
Benzo(ghi)perylene	100		1.08		74.9	ug/L	25	74	(0%-30%)			
Benzo(k)fluoranthene	100		1.26		77.1	ug/L	29	76	(0%-30%)			
Butylbenzylphthalate	100	U	ND		73.4	ug/L	31*	72	(0%-30%)			
Caprolactam	100	U	ND		31.5	ug/L	30	31	(0%-30%)			
Carbazole	100		1.13		43.8	ug/L	32*	43	(0%-30%)			
Chrysene	100		1.21		74.2	ug/L	30	73	(0%-30%)			
Di-n-butylphthalate	100	U	ND		87.5	ug/L	30	86	(0%-30%)			
Di-n-octylphthalate	100	U	ND		74.8	ug/L	31*	74	(0%-30%)			
Dibenzo(a,h)anthracene	100		1.07		79.8	ug/L	25	79	(0%-30%)			
Dibenzofuran	100	U	ND		70.9	ug/L	29	71	(0%-30%)			
Diethylphthalate	100	U	ND		78.5	ug/L	29	77	(0%-30%)			
Dimethylphthalate	100	U	ND		77.3	ug/L	30	76	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 28 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Diphenylamine	100	U	ND		76.3	ug/L	29	76	(0%-30%)	AGS1	08/28/17	22:12
Fluoranthene	100		1.14		73.9	ug/L	31*	73	(0%-30%)			
Fluorene	100	J	0.980		72.7	ug/L	28	72	(0%-30%)			
Hexachlorobenzene	100	U	ND		90.0	ug/L	29	90	(0%-30%)			
Hexachlorobutadiene	100	U	ND		77.6	ug/L	28	78	(0%-30%)			
Hexachlorocyclopentadiene	100	U	ND		48.7	ug/L	23	49	(0%-30%)			
Hexachloroethane	100	U	ND		70.3	ug/L	22	70	(0%-30%)			
Indeno(1,2,3-cd)pyrene	100		1.06		76.6	ug/L	25	76	(0%-30%)			
Isophorone	100	U	ND		81.3	ug/L	33*	81	(0%-30%)			
N-Nitrosodipropylamine	100	U	ND		84.0	ug/L	27	84	(0%-30%)			
Naphthalene	100	U	ND		70.3	ug/L	30	70	(0%-30%)			
Nitrobenzene	100	U	ND		78.1	ug/L	30	78	(0%-30%)			
Pentachlorophenol	100	U	ND		92.9	ug/L	30	93	(0%-30%)			
Phenanthrene	100		1.15		74.7	ug/L	30	74	(0%-30%)			
Phenol	100	U	ND		40.0	ug/L	24	40	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 29 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Pyrene	100		1.09		70.0	ug/L	31*	69	(0%-30%)	AGS1	08/28/17	22:12
bis(2-Chloro-1-methylethyl)ether	100	U	ND		72.5	ug/L	27	72	(0%-30%)			
bis(2-Chloroethoxy)methane	100	U	ND		75.5	ug/L	29	76	(0%-30%)			
bis(2-Chloroethyl) ether	100	U	ND		78.0	ug/L	25	78	(0%-30%)			
bis(2-Ethylhexyl)phthalate	100	U	ND		79.9	ug/L	30	79	(0%-30%)			
m,p-Cresols	100	U	ND		71.6	ug/L	26	72	(0%-30%)			
m-Nitroaniline	100	U	ND		44.6	ug/L	2	45	(0%-30%)			
o-Cresol	100	U	ND		66.5	ug/L	23	66	(0%-30%)			
o-Nitroaniline	100	U	ND		68.0	ug/L	30	68	(0%-30%)			
p-Nitroaniline	100	U	ND		68.3	ug/L	27	68	(0%-30%)			
**2,4,6-Tribromophenol	200		73.9		152	ug/L		76	(32%-124%)			
**2-Fluorobiphenyl	100		33.5		63.7	ug/L		64	(32%-112%)			
**2-Fluorophenol	200		33.3		100	ug/L		50	(15%-88%)			
**Nitrobenzene-d5	100		35.2		70.8	ug/L		71	(36%-115%)			
**Phenol-d5	200		21.2		73.7	ug/L		37	(15%-91%)			

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QC Summary

Workorder: 431203

Page 30 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
**p-Terphenyl-d14	100	45.1		79.5	ug/L		79	(36%-121%)	AGS1	08/28/17	22:12
QC1203862495 431312003 MSD											
1,1'-Biphenyl	111	U	ND	87.9	ug/L	2	79	(0%-30%)		08/25/17	23:20
1,2,4,5-Tetrachlorobenzene	111	U	ND	92.8	ug/L	3	84	(0%-30%)			
2,3,4,6-Tetrachlorophenol	111	U	ND	96.0	ug/L	10	86	(0%-30%)			
2,4,5-Trichlorophenol	111	U	ND	104	ug/L	8	94	(0%-30%)			
2,4,6-Trichlorophenol	111	U	ND	95.8	ug/L	4	86	(0%-30%)			
2,4-Dichlorophenol	111	U	ND	96.3	ug/L	1	87	(0%-30%)			
2,4-Dimethylphenol	111	U	ND	72.0	ug/L	9	65	(0%-30%)			
2,4-Dinitrophenol	111	U	ND	70.7	ug/L	7	64	(0%-30%)			
2,4-Dinitrotoluene	111	U	ND	97.0	ug/L	7	87	(0%-30%)			
2,6-Dinitrotoluene	111	U	ND	94.9	ug/L	6	85	(0%-30%)			
2-Chloronaphthalene	111	U	ND	84.1	ug/L	1	76	(0%-30%)			
2-Chlorophenol	111	U	ND	87.9	ug/L	1	79	(0%-30%)			
2-Methyl-4,6-dinitrophenol	111	U	ND	85.3	ug/L	1	77	(0%-30%)			
2-Methylnaphthalene	111	U	ND	85.0	ug/L	3	76	(0%-30%)			

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QC Summary

Workorder: 431203

Page 31 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
2-Nitrophenol	111	U	ND		89.2	ug/L	0	80	(0%-30%)	AGS1	08/25/17	23:20
3,3'-Dichlorobenzidine	111	U	ND		81.3	ug/L	2	73	(0%-30%)			
4-Bromophenylphenylether	111	U	ND		94.5	ug/L	5	85	(0%-30%)			
4-Chloro-3-methylphenol	111	U	ND		104	ug/L	2	94	(0%-30%)			
4-Chloroaniline	111	U	ND		112	ug/L	2	100	(0%-30%)			
4-Chlorophenylphenylether	111	U	ND		99.4	ug/L	3	89	(0%-30%)			
4-Nitrophenol	111	U	ND		53.4	ug/L	10	48	(0%-30%)			
Acenaphthene	111	U	ND		92.0	ug/L	3	83	(0%-30%)			
Acenaphthylene	111	U	ND		85.8	ug/L	1	77	(0%-30%)			
Acetophenone	111	U	ND		96.4	ug/L	1	87	(0%-30%)			
Anthracene	111	U	ND		87.1	ug/L	6	78	(0%-30%)			
Atrazine	111	U	ND		100	ug/L	4	90	(0%-30%)			
Benzaldehyde	111	U	ND		62.8	ug/L	9	57	(0%-30%)			
Benzo(a)anthracene	111	U	ND		87.1	ug/L	7	78	(0%-30%)			
Benzo(a)pyrene	111	U	ND		89.2	ug/L	7	80	(0%-30%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 32 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Benzo(b)fluoranthene	111	U	ND		92.3	ug/L	8	83	(0%-30%)	AGS1	08/25/17	23:20
Benzo(ghi)perylene	111	U	ND		83.2	ug/L	3	75	(0%-30%)			
Benzo(k)fluoranthene	111	U	ND		95.9	ug/L	6	86	(0%-30%)			
Butylbenzylphthalate	111	U	ND		97.0	ug/L	8	87	(0%-30%)			
Caprolactam	111	U	ND		40.0	ug/L	9	36	(0%-30%)			
Carbazole	111	U	ND		93.8	ug/L	5	84	(0%-30%)			
Chrysene	111	U	ND		87.9	ug/L	6	79	(0%-30%)			
Di-n-butylphthalate	111	U	ND		94.2	ug/L	7	85	(0%-30%)			
Di-n-octylphthalate	111	U	ND		88.0	ug/L	10	79	(0%-30%)			
Dibenzo(a,h)anthracene	111	U	ND		92.3	ug/L	2	83	(0%-30%)			
Dibenzofuran	111	U	ND		89.3	ug/L	4	80	(0%-30%)			
Diethylphthalate	111	U	ND		92.1	ug/L	8	83	(0%-30%)			
Dimethylphthalate	111	U	ND		92.5	ug/L	6	83	(0%-30%)			
Diphenylamine	111	U	ND		90.6	ug/L	4	82	(0%-30%)			
Fluoranthene	111	U	ND		87.6	ug/L	6	79	(0%-30%)			

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 33 of 35

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch	1694954											
Fluorene	111	U	ND		92.1	ug/L	4	83	(0%-30%)	AGS1	08/25/17	23:20
Hexachlorobenzene	111	U	ND		98.9	ug/L	4	89	(0%-30%)			
Hexachlorobutadiene	111	U	ND		92.5	ug/L	4	83	(0%-30%)			
Hexachlorocyclopentadiene	111	U	ND		46.6	ug/L	16	42	(0%-30%)			
Hexachloroethane	111	U	ND		76.8	ug/L	5	69	(0%-30%)			
Indeno(1,2,3-cd)pyrene	111	U	ND		86.5	ug/L	4	78	(0%-30%)			
Isophorone	111	U	ND		94.7	ug/L	0	85	(0%-30%)			
N-Nitrosodipropylamine	111	U	ND		96.7	ug/L	2	87	(0%-30%)			
Naphthalene	111	U	ND		85.7	ug/L	4	77	(0%-30%)			
Nitrobenzene	111	U	ND		94.0	ug/L	1	85	(0%-30%)			
Pentachlorophenol	111	U	ND		106	ug/L	8	95	(0%-30%)			
Phenanthrene	111	U	ND		90.4	ug/L	3	81	(0%-30%)			
Phenol	111	U	ND		47.1	ug/L	4	42	(0%-30%)			
Pyrene	111	U	ND		103	ug/L	5	93	(0%-30%)			
bis(2-Chloro-1-methylethyl)ether	111	U	ND		78.4	ug/L	3	71	(0%-30%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 34 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch	1694954										
bis(2-Chloroethoxy)methane	111	U	ND	91.1	ug/L	0	82	(0%-30%)	AGS1	08/25/17	23:20
bis(2-Chloroethyl) ether	111	U	ND	90.5	ug/L	4	81	(0%-30%)			
bis(2-Ethylhexyl)phthalate	111	U	ND	102	ug/L	7	92	(0%-30%)			
m,p-Cresols	111	U	ND	86.8	ug/L	2	78	(0%-30%)			
m-Nitroaniline	111	U	ND	109	ug/L	1	98	(0%-30%)			
o-Cresol	111	U	ND	77.1	ug/L	4	69	(0%-30%)			
o-Nitroaniline	111	U	ND	87.8	ug/L	4	79	(0%-30%)			
p-Nitroaniline	111	U	ND	116	ug/L	1	105	(0%-30%)			
**2,4,6-Tribromophenol	222		77.6	192	ug/L		87	(32%-124%)			
**2-Fluorobiphenyl	111		36.1	75.8	ug/L		68	(32%-112%)			
**2-Fluorophenol	222		36.1	112	ug/L		50	(15%-88%)			
**Nitrobenzene-d5	111		37.7	83.8	ug/L		75	(36%-115%)			
**Phenol-d5	222		22.0	87.1	ug/L		39	(15%-91%)			
**p-Terphenyl-d14	111		57.9	116	ug/L		104	(36%-121%)			

Notes:

The Qualifiers in this report are defined as follows:

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 431203

Page 35 of 35

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
**	Analyte is a surrogate compound										
<	Result is less than value reported										
>	Result is greater than value reported										
A	The TIC is a suspected aldol-condensation product										
B	The target analyte was detected in the associated blank.										
C	Analyte has been confirmed by GC/MS analysis										
D	Results are reported from a diluted aliquot of the sample										
E	Concentration of the target analyte exceeds the instrument calibration range										
H	Analytical holding time was exceeded										
J	Value is estimated										
JNX	Non Calibrated Compound										
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
N	Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor										
N/A	RPD or %Recovery limits do not apply.										
N1	See case narrative										
ND	Analyte concentration is not detected above the detection limit										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
R	Sample results are rejected										
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.										
UJ	Compound cannot be extracted										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	QC Samples were not spiked with this compound										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
h	Preparation or preservation holding time was exceeded										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Technical Case Narrative
H2GO Brunswick Regional Water & Sewer (H2GO)
SDG #: 431203

GC/MS Semivolatile

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

Analytical Method: SW846 3510C/8270D

Analytical Procedure: GL-OA-E-009 REV# 39

Analytical Batch: 1694954

Preparation Method: SW846 3510C

Preparation Procedure: GL-OA-E-013 REV# 32

Preparation Batch: 1694953

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
431203001	HUSK E
431203003	Buckeye Vault
1203861266	Method Blank (MB)
1203861267	Laboratory Control Sample (LCS)
1203861268	431410003(NonSDG) Matrix Spike (MS)
1203861269	431410003(NonSDG) Matrix Spike Duplicate (MSD)
1203862494	431312003(NonSDG) Matrix Spike (MS)
1203862495	431312003(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Surrogate Recoveries

Sample (See Below) did not meet surrogate recovery acceptance criteria. Since there is insufficient sample remaining to perform a re-extraction, the results from this extraction are reported.

Sample	Analyte	Value
431203003 (Buckeye Vault)	Phenol-d5	7* (15%-91%)

Laboratory Control Sample (LCS) Recovery

The LCS and/or LCSD (See Below) did not meet spike recovery acceptance criteria. The failures are known to be poor responding analytes as stated per the Method. This may account for the low recoveries and the data were reported.

Sample	Analyte	Value
--------	---------	-------

1203861267 (LCS)	Benzaldehyde	31* (38%-113%)
	Hexachlorocyclopentadiene	33* (34%-89%)

Spike Recovery Statement

The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. Because the recoveries were biased high and the target analytes were not detected in the associated samples above the reporting limit, the data were reported.

Sample	Analyte	Value
1203861268 (Non SDG 431410003MS)	Hexachlorobenzene	120* (40%-118%)
	Hexachlorobutadiene	103* (26%-98%)
	Pentachlorophenol	126* (35%-121%)

MS/MSD Relative Percent Difference (RPD) Statement

The RPD values between the MS and MSD, (See Below), were not within the acceptance limits due to the large difference between the individual recoveries in each MS and MSD analyte pair. The failures may be attributed to an error in the extraction process.

Sample	Analyte	Value
1203861268MS and 1203861269MSD (Non SDG 431410003)	Several	See applicable report

Internal Standard (ISTD) Acceptance

Sample 431203003 (Buckeye Vault) failed ISTD acceptance criteria. The sample was re-analyzed and confirmed the failures. The initial analysis data are reported. The re-analysis raw data have been placed in the Miscellaneous Section where applicable.

Technical Information

Sample Re-extraction/Re-analysis

Samples 1203861268 (Non SDG 431410003MS) and 1203861269 (Non SDG 431410003MSD) were re-analyzed to confirm the parent sample and MSD labels were switched by prep.

Miscellaneous Information

TIC Comment

Tentatively identified compounds (TIC) were requested for samples 431203001 (HUSK E) and 431203003 (Buckeye Vault) in this SDG in this batch.

LCMSMS-Misc

Product: The Extraction and Analysis of Per and Polyfluoroalkyl Substances Using LCMSMS

Analytical Method: EPA 537

Analytical Procedure: GL-OA-E-076 REV# 2

Analytical Batches: 1694307 and 1694306

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
431203001	HUSK E
431203002	HUSK E Trip Blank
431203003	Buckeye Vault
431203004	Buckeye Vault Trip Blank
1203860007	Method Blank (MB)
1203860008	Laboratory Control Sample (LCS)
1203860009	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions

The following samples was/were diluted to bring the over range concentrations within the calibration range. 431203001 (HUSK E) and 431203003 (Buckeye Vault).

Analyte	431203	
	001	003
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	5X	5X

Product: The Extraction and Analysis of Per and Polyfluroalkyl Substances Using LCMSMS

Analytical Method: EPA 537

Analytical Procedure: GL-OA-E-076 REV# 2

Analytical Batches: 1698648 and 1694306

The following samples were analyzed using the above methods and analytical procedure(s).

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
431203001	HUSK E
431203002	HUSK E Trip Blank
431203003	Buckeye Vault
431203004	Buckeye Vault Trip Blank

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions

The following samples was/were diluted to bring the over range concentrations within the calibration range. 431203001 (HUSK E) and 431203003 (Buckeye Vault).

Analyte	431203	
	001	003
Several	5X	5X

Miscellaneous Information**Additional Comments**

These results are estimated concentrations and were calculated using the GenX calibration curve because authentic standards are not available for these analytes. The data are qualified accordingly.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL Chain of Custody and Analytical Request

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

GEL Work Order Number: 431203

Client Name: 14260

Phone #: (910) 371-9949

Project/Site Name:

Fax #: (910) 371-6441

Address: PO Box 2230 Lenoir NC 28451

Collected by: Smith / Evans

[illegible]

TAT Requested:	Normal:	Rush:	Specify:	Fax Results: (Subject to Surcharge)	Yes	No	Circle Deliverable:	C of A	/ QC Summary / Level 1	/ Level 2 / Level 3 / Level 4
----------------	---------	-------	----------	---	-----	----	---------------------	--------	------------------------	-------------------------------

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

	Eastern	Pacific
Central		Other
Mountain		

Chain of Custody Signatures			Sample Shipping and Delivery Details	
Relinquished By (Signed)	Date	Time	Received by (signed)	Date Time
<i>[Signature]</i>	4/17	1610	<i>[Signature]</i>	4/17 9:10 AM
2			2	
3			3	

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite Sample

a.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, F=Fecal, N=Nasal, U=Urine, F=Fecal, N=Nasal, P=Wipe, U=Urine, F=Fecal, N=Nasal

5) Sample Analysis Requested: Analytical method requested (i.e. 8760B, 6010B/7470A) and number of containers provided for each (i.e. 8760B 3, 6010B/7470A 1)

2. Sample frequency requested: 2,048,000/4/0.001;

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank

YELLOW = FILE
PINK = CLIENT

SAMPLE RECEIPT & REVIEW FORM

Client: HQGO		SDG/AR/COC/Work Order: 431203	
Received By: Christie Beames		Date Received: August 22, 2017	
Carrier and Tracking Number		Circle Applicable: ☒ FedEx Express ☐ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other 7336 9697 7146	
Suspected Hazard Information	☐ Yes ☒ No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
Shipped as a DOT Hazardous?	☒ Yes ☐ No	Hazard Class Shipped: _____ UN#: _____	
COC/Samples marked or classified as radioactive?	☒ Yes ☐ No	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM/mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
Is package, COC, and/or Samples marked HAZ?	☒ Yes ☐ No	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria		☐ Yes ☒ NA ☐ No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	☒ Yes ☐ NA ☐ No	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	☒ Yes ☐ NA ☐ No	
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☒ Yes ☐ NA ☐ No	Preservation Method: ☒ Wet Ice ☐ Ice Packs ☐ Dry ice ☐ None Other: _____ *all temperatures are recorded in Celsius TEMP: 2°C
4	Daily check performed and passed on IR temperature gun?	☒ Yes ☐ NA ☐ No	Temperature Device Serial #: TR1-17 Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	☒ Yes ☐ NA ☐ No	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	☒ Yes ☐ NA ☐ No	Sample ID's and Containers Affected:
7	Do any samples require Volatile Analysis?	☒ Yes ☐ NA ☐ No	If Preservation added Lot#: _____ If Yes, Are Encores or Soil Kits present? Yes _____ No _____ (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes _____ No _____ N/A _____ (If unknown, select No) VOA vials free of headspace? Yes _____ No _____ N/A _____ Sample ID's and containers affected: _____
8	Samples received within holding time?	☒ Yes ☐ NA ☐ No	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	☒ Yes ☐ NA ☐ No	Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	☒ Yes ☐ NA ☐ No	Sample ID's affected:
11	Number of containers received match number indicated on COC?	☒ Yes ☐ NA ☐ No	Sample ID's affected:
12	Are sample containers identifiable as GEL provided?	☒ Yes ☐ NA ☐ No	
13	COC form is properly signed in relinquished/received sections?	☒ Yes ☐ NA ☐ No	
Comments (Use Continuation Form if needed):			

PM (or PMA) review: Initials **HA**

Date **082217**

Page **1** of **1**

List of current GEL Certifications as of 06 October 2017

State	Certification
Alaska	UST-0110
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA170010
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122018-1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-17-12
Utah NELAP	SC000122017-23
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404