WATER QUALITY SURVEY

TOWN OF LONDONDERRY
LONDONDERRY, NEW HAMPSHIRE

Prepared For:

Town of Londonderry
268B Mammoth Road
Londonderry, NH 03053
Mr. Stephen R. Cotton
Administrative Support Coordinator

Prepared By:

NOBIS GROUP®
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October 25, 2019
Nobis File No. 95160.00

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Mr. Stephen R. Cotton
Administrative Support Coordinator
Town of Londonderry
268B Mammoth Road
Londonderry, NH 03053

Re: Water Quality Survey
Town of Londonderry
Londonderry, New Hampshire

Dear Mr. Cotton:

Nobis Group® (Nobis) is pleased to provide this *Water Quality Survey* (WQS) for the Town of Londonderry. This WQS was prepared in general accordance with a proposal authorized on September 6, 2018.

The enclosed report provides a summary of water quality sampling completed throughout the town of Londonderry during 2019. Thirty-two private water supplies and thirteen surface water samples were collected as part of this WQS. This report is subject to the limitations in Appendix A.

Thank you for the opportunity to be of service to you. Please do not hesitate to contact us if you have any questions.

Sincerely,

NOBIS GROUP®

Mark R. Henderson, PG
Senior Project Manger

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LONDONDERRY, NEW HAMPSHIRE

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1.0 INTRODUCTION

On behalf of the town of Londonderry (client), Nobis Group® (Nobis) prepared this Water Quality Survey (WQS) for work completed within the town of Londonderry, New Hampshire. The town and participating properties are depicted on **Figure 1**.

This report presents information collected from field sampling activities completed in 2019. This report is subject to the Limitations provided in **Appendix A**. Private drinking water supply and surface water sampling was completed in general conformance with our proposal authorized on September 6, 2018. We note, discussion and negotiation with NHDES occurred throughout the fall of 2018 eventually successfully creating a teaming arrangement to modify the sampling program.

1.1 Summary of Prior Sampling

An Environmental Baseline Study of Water Well and Surface Water Quality from the town of Londonderry was first completed in 2001 and 2002. The Town of Londonderry established the Environmental Baseline Study Committee (EBSC) in March 2001. The primary objective of the EBSC was to establish a baseline of the environmental quality within the town, with specific regard to well water quality and surface water quality. The EBSC randomly selected over 600 residential locations from the Town's homeowner database, and only included homes that had individual deep or dug wells and the ability to bypass any type of treatment or filtration system. The sampling program ultimately consisted of 154 residential participants at locations distributed throughout the town. Areas where town water or community wells serve the population were not included in the study.

Results from the baseline study found 27% of the wells sampled contained the metal arsenic at a concentration above 10 micrograms per liter (ug/l) within the groundwater analyzed. Additionally, lead was detected within 6 water supply samples at concentrations in excess of the maximum concentration limit (MCL). Copper, zinc, cadmium and nickel were also detected but below their respective MCLs. The gasoline additive, methyl tert butyl ether (MTBE) was detected within tweleve (12) water supplies but generally below the Ambient Groundwater Quality Standard (AGQS) of 13 ug/l. Note, per- and polyfluoroalkyl substances (PFAS) were not analyzed during the 2001/2002 baseline sampling.

The 2019 sampling activities associated with this WQS were completed to augment information and data collected during the original Baseline Study. A summary of our field methods, the sampling results, and our recommendations follow.

2.0 PROPERTY IDENTIFICATION & REQUEST LETTERS

Nobis was retained by the Town of Londonderry to complete a follow-up water quality study. The purpose of the follow-up study is to further document water quality conditions within the town and assess potential changes in water quality over time. As such, many of the residential water supply wells that were part of the original study were included in the current sampling program. Additionally, new 'target' wells were identified and included in the study. Targeted wells were identified by proximity to environmental areas of interest and/or relative location to wells previously sampled that had detections of contaminants of concern (COCs).

The study area was divided into six (6) distinct sampling districts based upon inferred local watershed areas and topographical features. Specifically, they are comprised of the following districts:

- Watts Brook watershed (District 1),
- Little Cohas Brook watershed (District 2),
- Beaver Brook and Scobie Pond watershed (District 3),
- Nesenkeag Brook watershed (District 4),
- Chase Brook and lower Beaver Brook watershed (District 5), and
- Beaver Brook watershed (District 6).

After dividing the study area into sampling districts, the original sampling locations were evaluated for the potential presence of town water or community supply wells that may serve those locations. Ultimately, 50 locations were selected, 39 of which were participants of the original study with 11 new target locations. Access agreements and water supply well questionnaires were mailed to each homeowner once approved by the town.

Due to a low initial response rate, second attempt letters were mailed to homeowners yet to respond to access agreement letters. While waiting for the return of the second attempt agreements, alternate sample locations were identified. In total, 36 alternate locations were selected, 19 of which had previously been sampled with 17 new target locations. Access agreements and water supply well questionnaires were created and mailed for these alternate locations.

Due to continued low response rates to access agreements, a second group of alternate locations were identified. In total, 25 additional locations were selected for sampling, and were all new target locations.

In total, 32 out of 111 solicited homeowners elected to participate in the study. Of the 32 locations, 22 were sampled as part of the original EBSC study while 10 were new target wells. Further, each sampling district had varied response rates, ranging from 8 samples per district (District 1) to 3 samples per district (District 2). Sampling districts and residential drinking water sample locations are depicted on **Figure 1**.

3.0 SUMMARY OF COMPLETED ACTIVITIES

3.1 Private Water Supply Sample Collection

Water supply sampling occurred during the period of May through July 2019. In total, 32 private water supplies were samples by Nobis technicians. Private water supply samples were collected from a sampling port prior to water treatment (e.g. softeners) if present, or an interior kitchen faucet. The water supplies were allowed to run for at least 15 minutes to flush/purge the lines prior to sample collection.

Sampling dates were coordinated with individual property owners after receiept of a properly executed access agreement. Water supplies were sampled for the presence of RCRA-8 metals, nitrate, nitrite, volatile organic compounds (VOCs), and PFAS. Based on the cost sharing agreement with the NHDES, samples were split for delivery to the NHDES and to Nelson Analytical, Inc. (Nelson) of Manchester, New Hampshire. NHDES then sent samples for VOC analyses to ChemServe, Inc. (ChemServe) of Milford, New Hampshire and to Eurofins/Test America (Eurofins) of Sacremento, California for analysis of PFAS. Therefore, each water supply has three laboratory reports associated with the sampling.

3.2 Surface Water Sample Collection

Surface water samples were collected from various surface water bodies within the town during the original EBSC study. In total, 13 locations were sampled and consisted of locations along Beaver Brook, Little Cohas Brook, Shields Brook, Watts Brook, Nesenkeag Brook, Cohas Brook, Moose Hill Pond outlet, and Scobie Pond outlet. To the extent possible the original sample locations were used in the current study. Coordinates of each surface water sample location were recorded during sample collection and are presented on **Figure 1**.

Surface water was sampled for the presence of RCRA-8 metals, nitrate, nitrite, total phosphate, VOCs, and PFAS. As with the water supply samples, Nelson analyzed the samples for the presence of nitrate, nitrite, phosphate, and metals. ChemServe analyzed the samples for the presence of VOCs and Eurofins analyzed the samples for the presence of PFAS.

3.3 Laboratory Analytical Results

Analytical results were forwarded to Nobis (some via NHDES) where the data was tracked within a spreadsheet. Data was also uploaded via the environmental monitoring database (EMD) to the NHDES. The private water supply samples were collected within laboratory supplied containers and placed on ice during transportation under proper chain-of-custody procedures to Nelson Analytical, Inc. of Manchester, New Hampshire and NHDES. Water samples were analyzed by Nelson for the presence of nitrate/nitrite via Method SM 4500; metals via EPA Method 200.8; and phosphate via HACH 8190. ChemServe analyzed samples for the presence of VOCs by NHDES *Petroleum and Hazardous Waste Full List* via Environmental Protection Agency (EPA) Method 524.2. Eurofins analyzed samples for the presence of PFAS via EPA Method 537 (mod). A copy of the laboratory analytical reports from the 2019 sampling are included as **Appendix B**.

Private water supply sampling results were previously provided to the individual property owners via mail.

3.4 Evaluation of Water Supply Quality

<u>VOCs</u>

Only two water supplies contained detectable VOCs: MTBE was detected at a concentration of 0.58 parts per billion (ppb) in the water supply located at 5 Allison Lane and chloroform was detected at a concentration of 13 ppb in the sample collected from 11 Ross Drive. Neither VOC compound was detected at a concentration in excess of the corresponding AGQS. We note, chloroform was reported within the 11 Ross Drive water supply during the original sampling program at a concentration of 2.1 ppb.

MTBE was reported in 8% of the original sampling program wells (12 of 154) at detected concentrations ranging from 1.7 to 20 ppb. Five (5) of those original twelve locations were sampled during this WQS. None of the five wells originally impacted by MTBE contained a detectable level of MTBE in 2019. Only one well from Allison Lane contained a trace level of MTBE. These results suggest significant improvement related to VOCs.

<u>PFAS</u>

Thirteen (13) of the twenty (20) PFAS compounds analyzed were reported as detected within at least one of the water supplies samples. Of these 13 compounds, perfluorooctanoic acid (PFOA) is the most prevelant and concerning PFAS compound. A summary of PFAS results for water supply sampling is provided as **Table 1**. PFOA was detected within 29 of the 32 water supply samples collected and within each of the six sampling districts. NHDES adopted new AGQS for four PFAS compounds; PFOA, perflourooctane sulfonic acid (PFOS), perflourohexane sulfonic

acid (PFHxS) and perflourononanoic acid (PFNA) on September 30, 2019. PFOA was reported above the new AGQS of 12 parts per trillion (ppt) in 13 of the 32 water supplies sampled. PFOA concentrations ranged from 0.9 to 41 ppt. **Figures 2A and 2B** depict distribution of PFOA in wells and surface water within the town. The majority of the highest PFOA concentration impacts are located within districts 1 and 4, generally located in the western portion of town nearest to the Litchfield town boundary.

Nitrate & Nitrite

Nitrate was reported in eleven of the 32 wells sampled. Detected nitrate concentration ranged from 1.0 to 4.0 ppm, well below the AGQS of 10 ppm. Nitrite generally was not detected during the sampling event. Nitrate and nitrite are generally related to fertilizers, animal waste and sewage and according to the US Geological Survey, "Nitrate is the most common inorganic contaminant derived from man-made sources". In general, this study revealed low concentration and does not appear to inidicate large scale nitrate issues.

Metals

Detectable levels of four (4) metals were reported within the water supply sampling program. Arsenic, barium, chromium and lead were detected in water supplies sampled. Of these, only arsenic and lead were reported above their corresponding AGQS of 0.01 and 0.015 ppm. Lead was detected within 13 of the 32 wells samples (40%); however, only four were reported above the AGQS with a maximum detected concentration of 0.3 ppm. A summary of metals results for water supply sampling is provided as **Table 2**.

Arsenic was detected within 24 of the 32 wells sampled (75%). Five (5) of the 24 detections exceed the current AGQS of 0.010 ppm. All five of these are in the northern three districts (District 1, District 2, and District 3) and likely correspond to specific bedrock composition of water bearing fractures in this area. There does not appear to be a corresponding distribution related to orchards and pesticide use. **Figure 3** provides a map depicting the distribution of arsenic in wells and surface water within the town.

In the original study 39% of the wells contained arsenic at a detectable concentration (>0.005 ppm). Using the same threshold, 29% of the current dataset would be deemed to contain arsenic. This is significant as the NHDES has proposed a new lower AGQS for arsenic of 5 ppb (0.005 ppm). Therfore, the current 16% of wells exceeding AGQS would increase to roughly one third of the water supplies in the town.

Property	Arsenic Concentration (ppm)	
	Original 2001	2019
21 Lawson Farm Road	0.043	0.034
15 Partridge Lane	0.034	0.036
19 Pine Hollow Drive	0.016	0.002
9 Acropolis Avenue	0.010	0.006
17 Wilshire Drive	0.009	0.007
97 Gilcreast Road	0.006	0.007
28 Hazelnut Lane	0.006	0.011
46 Otterson Road	0.006	0.004
17 Wimbeldon Drive	0.006	0.001

The table above provides a comparison of arsenic concentration at those properties sampled during both the original (2001) and 2019 sampling events and which contained detectable arsenic concentrations. Generally, arsenic concentration within these wells has remained consistent and stable.

3.5 Evaluation of Surface Water Quality

The surface water samples were evaluated for the presence of VOCs, RCRA-8 metals, phosphate and nitrate/nitrite. VOCs were not detected within the thirteen surface water samples collected as part of this study. The metal barium was detected in all samples analyzed at concentrations ranging from 0.011 to 0.24 ppm. These concentrations appear to be low and consistent throughout the town. Arsenic was detected in only two surface water samples at low concentrations. Lead was detected in one surface water sample at a concentration of 0.002 ppm. The remaining five metals were not detected within the samples analyzed. In general, adverse impact via metals to surface waters is not suggested. A summary of results for surface water sampling is provided as **Table 3**.

Nitrate/nitrite was evaluated in six of the surface water smples. None of the six locations contained nitrate/nitirite above method detection limits. Total phosphate as phosphorus was consistently reported within all but one of the surface water samples. Phosphate was reported at concentrations ranging from 0.11 to 0.52 ppm. These concentrations appear elevated relative to ideal surface water phosphorus concentrations reported within the published literature and may be attributable to the historic agricultural nature of the town, or native rock type. NHDES suggests (Env-Wq 1703.14(a)) phosphorus should be absent from Class A water bodies unless naturally occurring. Additional testing would be required to further evaluate the potential contributors to elevated phosphate.

Thirteen (13) of the twenty (20) PFAS compounds analyzed were reported as detected within at least one of the surface water samples. Of these 13 compounds, again perfluorooctanoic acid (PFOA) is the most prevelant and concerning PFAS compound. PFOA was detected within all thirteen surface water samples collected and within each of the six sampling districts. PFOA concentration ranged from 9.8 to 42 ppt, with a mean concentration of 20.5 ppt. A summary of PFAS results for surface water sampling is provided as **Table 4**.

4.0 CONCLUSIONS & RECOMMENDATIONS

4.1 Conclusions

Overall, low level PFAS impact is found throughout the town but higher concentrations are evident within the town in proximity to the Litchfield town boundary; therefore, some PFAS impacts may be attributable to the Saint Gobain facility operations in Merrimack, NH. The depositional model would be similar to impacts within the town of Litchfield but generally lesser in magnitude (further from the potential source). The outer boundary from the Saint Gobain Consent Decree is shown on **Figures 2A and 2B,** and generally runs along High Range Road. Per the Consent Decree, Saint Gobain may be responsible for providing bottled water to impacted water supplies to the west of High Range Road.

We note, the 2019 sampling was a small sub-sampling of the total of water supplies within the town. The results point to overall higher impacts from PFOA in the western portions of the town. Recent changes to the AGQS for PFOA suggest there is potential for health concerns associated with PFOA above 12 ppt. This is particularly of concern for pregnant women and breastfeeding mothers.

Arsenic impacts consistent with those observed during the original study were confirmed during this WQS. The arsenic standard was lowered to 10 ppb, and NHDES has proposed an even lower standard of 5 ppb that has yet to be implemented. Arsenic is a naturally occurring metal, but also was historically related to orchard pesticide use. This study did not reveal a significant relationship to orchard locations and the arsenic found in water supplies is presumed to be of a natural origin.

Overall, drinking water quality within the town appears to have improved relative to the original study. VOCs are generally not observed within the water supplies. Nitrates are generally low and metals are found within normal ranges. However, the occurrence of PFOA throughout town water supplies is of concern.

Surface water quality within the town appears stable relative to the original study. VOCs are not observed within surface waters tested. Metals are found within normal ranges. Phosphate levels appear somewhat elevated throughout the town and may be related to agricultural use, grass lawn fertilizers, or natural rock composition.

The occurrence of PFOA consistently throughout town surface waters is also of concern. Generally, the highest detected concentrations are within surface waters in the western portions of the town.

4.2 Recommendations

Nobis Group® provides the following recommendations related to water sampling:

- The town should continue with a periodic (5-year) sampling program to monitor overall water quality and compile a comparable database of water quality;

- Followup PFAS sampling at those residences with elevated PFOA results may be warranted. A discussion of results and potential for long term health effects should be completed with impacted residents. In some, if not all cases, these tasks may be the responsibility of NHDES or Saint Gobain;

- Further research/study of arsenic impacts on town bedrock water resources may be warranted. A better understanding of distribution and magnitude of arsenic occurrence could assist to direct prioritization of future water infrastructure planning by the Town.

TABLES

TABLE 1
SUMMARY OF DRINKING WATER PFAS ANALYSES
Drinking water Sampling Program
Londonderry, New Hampshire
Nobix Project No. 95160.00

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)		Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	Perfluorohexanoic Acid (PFHxA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorononanoic Acid (PFNA)	Perfluorodecanoic Acid (PFDA)	Perfluoroundecanoic Acid (PFUnA)	Perfluorododecanoic Acid (PFDoA)	Perfluorotridecanoic Acid (PFTRDA)	Perfluorotetradecanoic Acid (PFTEDA)	Perflourobutane Sulfonate (PFBS)	Perfluorohexane sulfonate (PFHxS)	Perfluoroheptane Sulfonic acid (PFHpS)	Perfluorooctane Sulfonate (PFOS)	Perfluorodecane Sulfonate (PFDS)	N-methylperflourooctanesulfonamideoacetic acid (NMeFOSAA)	6:2 Fluorotelomer Sulfonate	8:2 Fluorotelomer sulfonate	Perfluoro-n-hexadecanoic acid (PFHxDA)
NHDES AGQS		ns	ns	ns	ns	12	11	ns	ns	ns	ns	ns	ns	18	ns	15	ns	ns	ns	ns	ns
Location	Date																				
District 1																					
NOB-060 19 Justin Circle	6/5/2019	2.6B	2.4	2.9	3.3	22	<2	<2	<2	<2	<2	<2	6.3	2.0B	<2	2.5I	<2	<2	<10	<2	<2
NOB-59 7 Rolling Ridge Road	6/3/2019	5.7B	7.2	10	7.1	40	1.2J	0.5J	<1.9	<1.9	<1.9	<1.9	3.4	2.2B	0.2JI	12	<1.9	<1.9	<9.6	<1.9	<1.9
NOB-047 39 Rolling Ridge Road	5/15/2019	1.2J	0.7J	1.5J	2.1	13	<2	<2	<2	<2	<2	<2	0.8J	1.0JB	<2	1.2J	<2	<2	<9.9	<2	<2
NOB-058 114 Litchfield Road	6/3/2019	4.6B	5.9	7.8	5.9	41	0.4JI	<1.9	<1.9	<1.9	<1.9	<1.9	3.1	3.8B	0.2J	3.9	<1.9	<1.9	<9.5	<1.9	<1.9
NOB-41 19 Pine Hollow Drive	5/2/2019	4.2B	3.9	5.5	5.3	23	0.4J	<1.9	<1.9	<1.9	<1.9	<1.9	3.3	1.9B	<1.9	3.3I	<1.9	<1.9	<9.4	<1.9	<1.9
NOB-064 68 Alexander Road	6/11/2019	2.3B	2.4	4.7	6.6	37	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	4.0	1.1JB	<1.9	3.3	<1.9	<1.9	<9.5	<1.9	<1.9
NOB-072 8 Sara Beth Lane	6/17/2019	1.2 JH	<1.9	1.2JH	0.7JH	3.6H	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	0.9JH	0.9JHB	<1.9	1.2JH	<1.9	<1.9	<9.5	<1.9	<1.9
MTBE-2800 19 Teton Drive	6/20/2019	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	0.3JB	<1.8	<1.8	<1.8	<1.8	<9.1	<1.8	<1.8
District 2																					
NOB-043 21 Lawson Farm Road	5/2/2019	2.9B	0.7J	0.9JI	0.3J	3.1	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	0.6J	1.4JB	<1.9	<1.9	<1.9	<1.9	<9.4	<1.9	<1.9
NOB-048 28 Hazelnut Lane	5/15/2019	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	0.3JB	<1.9	<1.9	<1.9	<1.9	<9.6	<1.9	<1.9
NOB-050 2 Faye Lane	5/15/2019	<1.9	<1.9	<1.9	<1.9	0.9J	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	0.4JB	<1.9	<1.9	<1.9	<1.9	<9.5	<1.9	<1.9

TABLE 1
SUMMARY OF DRINKING WATER PFAS ANALYSES
Drinking water Sampling Program
Londonderry, New Hampshire
Nobix Project No. 95160.00

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)		Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	Perfluorohexanoic Acid (PFHxA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorononanoic Acid (PFNA)	Perfluorodecanoic Acid (PFDA)	Perfluoroundecanoic Acid (PFUnA)	Perfluorododecanoic Acid (PFDoA)	Perfluorotridecanoic Acid (PFTRDA)	Perfluorotetradecanoic Acid (PFTEDA)	Perflourobutane Sulfonate (PFBS)	Perfluorohexane sulfonate (PFHxS)	Perfluoroheptane Sulfonic acid (PFHpS)	Perfluorooctane Sulfonate (PFOS)	Perfluorodecane Sulfonate (PFDS)	N-methylperflourooctanesulfonamideoacetic acid (NMeFOSAA)	6:2 Fluorotelomer Sulfonate	8:2 Fluorotelomer sulfonate	Perfluoro-n-hexadecanoic acid (PFHxDA)
NHDES AGQS		ns	ns	ns	ns	12	11	ns	ns	ns	ns	ns	ns	18	ns	15	ns	ns	ns	ns	ns
Location	Date																				
District 3																					
NOB-042 15 Partridge Lane	5/2/2019	3.4B	2.1	3	1.8J	7.3	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	9.4	0.7JB	<1.9	0.8JI	<1.9	<1.9	<9.7	<1.9	<1.9
NOB-063 29 Beacon Street	6/11/2019	2.7B	2.7	3.4	2.0	7.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	7.7	1.6JB	<1.9	2.5	<1.9	<1.9	<9.3	<1.9	<1.9
NOB-062 5 Allison Lane	6/11/2019	1.1JB	<1.9	<1.9	<1.9	1.1J	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	0.7J	1.4JB	<1.9	0.7J	<1.9	<1.9	<9.6	<1.9	<1.9
NOB-073 5 Wilson Road	6/18/2019	0.8J	0.5J	1.2JI	1.7J	15	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	0.4J	0.7JIB	<1.8	0.5JI	<1.8	<1.8	<9.0	<1.8	<1.8
NOB-074 25 Coteville Road	6/26/2019	1.3J	2.0	3.3	1.6J	11	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	13	3.2B	<1.8	2.3I	<1.8	<1.8	<9.2	<1.8	<1.8
District 4																					
MTBE-1115 9 Acropolis Ave	6/11/2019	2.9B	2.5	3.3	1.8JB	9.4	0.3J	<1.9	<1.9	<1.9	<1.9	0.4JB	4.2B	1.4JB	0.2J	3.6	<1.9	<1.9	24B	<1.9	<1.9
NOB-044 15 Tyler Drive	5/9/2019	4.6B	5.7	7.0	3.2B	16	0.5J	<1.9	<1.9	<1.9	<1.9	0.3JB	8.5B	2.8B	<1.9	5.3	<1.9	<1.9	3.8JB	<1.9	<1.9
NOB-046 111 West Road	5/9/2019	3.8B	2.8	5	6.6B	41	0.7J	<1.9	<1.9	<1.9	<1.9	0.3JB	1.7JB	1.3JB	<1.9	3.6I	<1.9	<1.9	3.2JB	<1.9	<1.9
NOB-051 12 Mont Vernon Drive	5/21/2019	2.8	6.1	7.3	4.1	16	0.6J	<1.8	<1.8	<1.8	<1.8	<1.8	6.1	2.8B	0.2JI	4.9I	<1.8	<1.8	<9.0	<1.8	<1.8
NOB-045 25 Severence Drive	5/9/2019	5.1B	3.7	5.1	2.6B	13	0.3J	<1.9	<1.9	<1.9	<1.9	<1.9	11B	4.3B	0.3J	4.3I	<1.9	<1.9	2.3JB	<1.9	<1.9
District 5																					
MTBE-1118 95 Mammoth Road	5/9/2019	7.2B	8.8	9.4	5.1B	20	1.0J	0.6J	<1.9	<1.9	<1.9	<1.9	12B	6.3B	0.2J	8.1	<1.9	<1.9	<9.4	<1.9	<1.9
MTBE-1123 17 Wilshire Drive	5/9/2019	2.7B	3.0	4.3	2.5B	9.2	<1.9	<1.9	<1.9	<1.9	<1.9	0.3JB	7.1B	1.6JB	<1.9	1.2JI	<1.9	<1.9	<9.5	<1.9	<1.9
NOB-049 17 Wimbeldon Drive	5/15/2019	2.3	4.1	4.4	2.0	9.7	<2	<2	<2	<2	<2	<2	4.5	0.8JB	<2	1.2JI	<2	<2	17	<2	<2
NOB-075 4 Morningside Drive	7/18/2019	2.7	2.5	3.3	2	11	1.1J	<1.7	<1.7	<1.7	<1.7	<1.7	11	4.6B	0.3J	10	<1.7	<1.7	<8.5	<1.7	<1.7

TABLE 1
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Londonderry, New Hampshire
Nobix Project No. 95160.00

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)		Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	Perfluorohexanoic Acid (PFHxA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorononanoic Acid (PFNA)	Perfluorodecanoic Acid (PFDA)	Perfluoroundecanoic Acid (PFUnA)	Perfluorododecanoic Acid (PFDoA)	Perfluorotridecanoic Acid (PFTRDA)	Perfluorotetradecanoic Acid (PFTEDA)	Perflourobutane Sulfonate (PFBS)	Perfluorohexane sulfonate (PFHxS)	Perfluoroheptane Sulfonic acid (PFHpS)	Perfluorooctane Sulfonate (PFOS)	Perfluorodecane Sulfonate (PFDS)	N-methylperflourooctanesulfonamideoacetic acid (NMeFOSAA)	6:2 Fluorotelomer Sulfonate	8:2 Fluorotelomer sulfonate	Perfluoro-n-hexadecanoic acid (PFHxDA)
NHDES AGQS		ns	ns	ns	ns	12	11	ns	ns	ns	ns	ns	ns	18	ns	15	ns	ns	ns	ns	ns
Location	Date																				
District 6																					
TNK_DW-4 11 Ross Drive	5/9/2019	3.0B	2.8	4.1	2.1B	8.2	0.4J	<1.9	<1.9	<1.9	<1.9	<1.9	2.6B	1.4JB	<1.9	2.8I	<1.9	<1.9	2.5JB	<1.9	<1.9
MTBE-1120 10 Spruce Street	5/9/2019	2.7B	2.5	4.3	2.3B	7.2	0.4J	<1.9	<1.9	<1.9	<1.9	0.3JB	14B	1.8JB	<1.9	4.1	<1.9	<1.9	22B	<1.9	<1.9
NOB-039 46 Otterson Road	5/2/2019	1.2JB	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.4JB	<2	<2	<2	<2	<9.9	<2	<2
NOB-040 97 Gilcreast Road	5/2/2019	5.6B	7.1	8.7	3.6	15	0.5JI	<1.9	<1.9	<1.9	<1.9	<1.9	6.0	9.7B	0.2JI	5.8	<1.9	<1.9	<9.6	<1.9	<1.9
MTBE-1122 21 Tokanel Drive	5/21/2019	3.1	2.4	2.5	1.4J	7.0	0.4J	0.3JI	<1.9	<1.9	<1.9	<1.9	6.2	4.7B	0.2J	7.5I	<1.9	<1.9	<9.5	<1.9	<1.9
NOB-061 18 Otterson Road	6/5/2019	2.2B	3.3	5.0	2.2	10	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	6.1	2.5B	<1.9	2.8I	<1.9	<1.9	<9.6	<1.9	<1.9
MTBE-4073 7 Gardner Circle	6/17/2019	3.0	1.6J	1.6JI	0.8J	4.5	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	2.4	1.3JB	<1.8	1.5JI	<1.8	<1.8	<9.1	<1.8	<1.8

Notes:
1. All samples were collected by Nobis Group on the dates indicated.
2. All concentrations are reported in ng/L, equivalent to parts per trillion (ppt), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in Bold indicate a detection, Bold and Shaded indicate exceedances of applicable AGQS. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. The analyses were performed by Eurofins/Test America Laboratory of Sacramento, California by EPA Method 537 (mod) for PFAS.
5. AGQS refers to the Ambient Groundwater Quality Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600 revised September 1, 2018.
Qualifiers: B - Compound also found in method blank; J - Less than RL but > or = to the MDL; I - Value is estimated maximum possible concentration

TABLE 2
SUMMARY OF DRINKING WATER QUALITY ANALYSES
Water Quality Sampling Program
Londonderry, New Hasmpshire
Nobis Project Nol 95160.00

		Nitrate	Nitrite	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Methyl tert Butyl Ether (MTBE)/Total VOCs
NHDES AGQS**		10	1	0.01	2	0.01	0.10	0.015	0.002	0.05	0.1	0.013
	Date											
District 1												
NOB-060 19 Justin Circle	6/5/2019	1.4	<0.01	<0.001	<0.010	<0.001	<0.01	0.010	<0.0004	<0.01	<0.01	BD
NOB-59 7 Rolling Ridge Road	6/3/2019	2.9	<0.01	0.011	0.019	<0.001	<0.01	0.038	<0.0004	<0.01	<0.01	BD
NOB-047 39 Rolling Ridge Road	5/15/2019	<1	<0.01	0.002	0.025	<0.001	0.007	0.002	<0.0004	<0.015	<0.01	BD
NOB-058 114 Litchfield Road	6/3/2019	<1	<0.01	<0.001	0.016	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD
NOB-41 19 Pine Hollow Drive	5/2/2019	1.4	<0.01	0.002	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD
NOB-064 68 Alexander Road	6/11/2019	1.2	<0.01	<0.001	0.040	<0.001	0.012	0.002	<0.0004	<0.01	<0.01	BD
NOB-072 8 Sara Beth Lane	6/17/2019	<1	<0.01	0.018	0.074	<0.001	<0.01	0.200	<0.0004	<0.01	<0.01	BD
MTBE-2800 19 Teton Drive	6/20/2019	<1	<0.01	<0.001	0.016	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD
District 2												
NOB-043 21 Lawson Farm Road	5/2/2019	<1	<0.01	0.034	0.011	<0.001	<0.01	0.001	<0.0004	<0.01	<0.01	BD
NOB-048 28 Hazelnut Lane	5/15/2019	<1	<0.01	0.011	<0.010	<0.001	0.004	<0.001	<0.0004	<0.015	<0.01	BD
NOB-050 2 Faye Lane	5/15/2019	<1	<0.01	0.004	<0.010	<0.001	0.002	0.059	<0.0004	<0.015	<0.01	BD

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		Nitrate	Nitrite	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Methyl tert Butyl Ether (MTBE)/Total VOCs
NHDES AGQS**		10	1	0.01	2	0.01	0.10	0.015	0.002	0.05	0.1	0.013
	Date											
District 3												
NOB-042 15 Partridge Lane	5/2/2019	<1	<0.01	0.036	0.012	<0.001	<0.01	0.011	<0.0004	<0.01	<0.01	BD
NOB-063 29 Beacon Street	6/11/2019	<1	0.08	<0.001	0.005	<0.001	0.011	<0.001	<0.0004	<0.01	<0.01	BD
NOB-062 5 Allison Lane	6/11/2019	<1	<0.01	0.001	0.007	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.0006
NOB-073 5 Wilson Road	6/18/2019	<1	<0.01	0.001	0.129	<0.001	0.013	0.008	<0.0004	<0.01	<0.01	BD
NOB-074 25 Coteville Road	6/26/2019	1.2	<0.01	<0.001	<0.010	<0.001	<0.01	0.005	<0.0004	<0.01	<0.01	BD
District 4												
MTBE-1115 9 Acropolis Ave	6/11/2019	<1	<0.01	0.006	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	BD
NOB-044 15 Tyler Drive	5/9/2019	<1	<0.01	<0.001	<0.010	<0.001	<0.01	0.003	<0.0004	<0.015	<0.01	BD
NOB-046 111 West Road	5/9/2019	<1	<0.01	<0.001	0.014	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	BD
NOB-051 12 Mont Vernon Drive	5/21/2019	1.4	<0.01	0.001	0.010	<0.001	<0.01	0.001	<0.0004	<0.01	<0.01	BD
NOB-045 25 Severence Drive	5/9/2019	<1	<0.01	0.001	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	BD

TABLE 2
SUMMARY OF DRINKING WATER QUALITY ANALYSES
Water Quality Sampling Program
Londonderry, New Hasmpshire
Nobis Project Nol 95160.00

		Nitrate	Nitrite	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Methyl tert Butyl Ether (MTBE)/Total VOCs
NHDES AGQS**		10	1	0.01	2	0.01	0.10	0.015	0.002	0.05	0.1	0.013
	Date											
District 5												
MTBE-1118 95 Mammoth Road	5/9/2019	<1	<0.01	0.010	0.014	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	BD
MTBE-1123 17 Wilshire Drive	5/9/2019	1.0	<0.01	0.007	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	BD
NOB-049 17 Wimbeldon Drive	5/15/2019	<1	<0.01	0.001	0.027	<0.001	0.003	<0.001	<0.0004	<0.015	<0.01	BD
NOB-075 4 Morningside Drive	7/18/2019	4.0	<0.01	0.001	0.015	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD

TABLE 2
SUMMARY OF DRINKING WATER QUALITY ANALYSES
Water Quality Sampling Program
Londonderry, New Hasmpshire
Nobis Project Nol 95160.00

		Nitrate	Nitrite	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Methyl tert Butyl Ether (MTBE)/Total VOCs
NHDES AGQS**		10	1	0.01	2	0.01	0.10	0.015	0.002	0.05	0.1	0.013
	Date											
District 6												
TNK_DW-4 11 Ross Drive	5/9/2019	2.3	<0.01	0.003	0.013	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	0.013
MTBE-1120 10 Spruce Street	5/9/2019	<1	<0.01	0.009	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.015	<0.01	BD
NOB-039 46 Otterson Road	5/2/2019	4.0	<0.01	0.004	<0.010	<0.001	<0.01	0.30	<0.0004	<0.01	<0.01	BD
NOB-040 97 Gilcreast Road	5/2/2019	<1	<0.01	0.007	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD
MTBE-1122 21 Tokanel Drive	5/21/2019	<1	<0.01	0.005	<0.010	<0.001	0.010	<0.001	<0.0004	<0.01	<0.01	BD
NOB-061 18 Otterson Road	6/5/2019	1.8	<0.01	0.002	<0.010	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD
MTBE-4073 7 Gardner Circle	6/17/2019	<1	<0.01	0.003	0.037	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	BD

Notes:
1. All samples were collected by Nobis Group on the dates indicated.
2. All concentrations are reported in mg/L, equivalent to parts per trillion (ppm), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in Bold indicate a detection, Bold and Shaded indicate exceedances of applicable standard. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. VOCs were performed by ChemServe of Milford, NH. The remaining analyses were performed by Nelson Analytical Laboratory of Manchester, NH.
**AGQS = Ambient Groundwater Quality Standard

TABLE 3
SUMMARY OF SURFACE WATER QUALITY ANALYSES
Water Quality Sampling Program
Londonderry, New Hampshire
Nobis Project No. 95160.00

		Nitrate	Nitrite	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Phosphate Total	Total VOCs
Freshwater Aquatic - Chronic		ns	ns	0.15	ns	0.00021	0.0198	0.00041	0.00077	0.005	ns	*	ns
Freshwater Aquatic - Acute		ns	ns	0.34	ns	0.00039	0.152	0.01	0.0014	ns	0.0002	*	ns
Human Health Water & Fish Ingestion		10	ns	18 ng	1	ns	ns	ns	0.00005	0.17	0.105	ns	ns
NHDES AGQS**		10	1	0.01	2	0.01	0.10	0.015	0.002	0.05	0.1	ns	ns
Location	Date												
SW-1	5/21/2019	<1	<0.01	<0.001	0.012	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.52	BD
SW-2	5/21/2019	<1	<0.01	0.001	0.018	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.25	BD
SW-3	5/21/2019	<1	<0.01	<0.001	0.024	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.23	BD
SW-4	5/21/2019	<1	<0.01	<0.001	0.023	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.21	BD
SW-5	5/21/2019	<1	<0.01	0.003	0.024	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.25	BD
SW-6	6/11/2019	NA	NA	<0.001	0.020	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.11	BD
SW-7	6/11/2019	NA	NA	<0.001	0.018	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	<0.05	BD
SW-8	6/11/2019	NA	NA	<0.001	0.016	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.13	BD
SW-9	5/21/2019	<1	<0.01	<0.001	0.024	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.23	BD
SW-10	6/11/2019	NA	NA	<0.001	0.011	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.14	BD
SW-11	6/12/2019	NA	NA	<0.001	0.016	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.15	BD
SW-12	6/12/2019	NA	NA	<0.001	0.011	<0.001	<0.01	<0.001	<0.0004	<0.01	<0.01	0.13	BD
SW-13	6/11/2019	NA	NA	<0.001	0.021	<0.001	<0.01	0.002	<0.0004	<0.01	<0.01	0.17	BD

Notes:
1. All samples were collected by Nobis Group on the dates indicated.
2. All concentrations are reported in mg/L, equivalent to parts per trillion (ppm), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in Bold indicate a detection, Bold and Shaded indicate exceedances of applicable standard. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. VOCs were performed by ChemServe of Milford, NH. The remaining analyses were performed by Nelson Analytical Laboratory of Manchester, NH.
**AGQS are not directly applicable to surface water and provided simply for comparison purposes
5. Freshwater Aquatic Chronic and Acute Criteria, and Human Health Water & Fish Ingestion Criteria from Table 1703-1: Water Quality Criteria for Toxic Substances

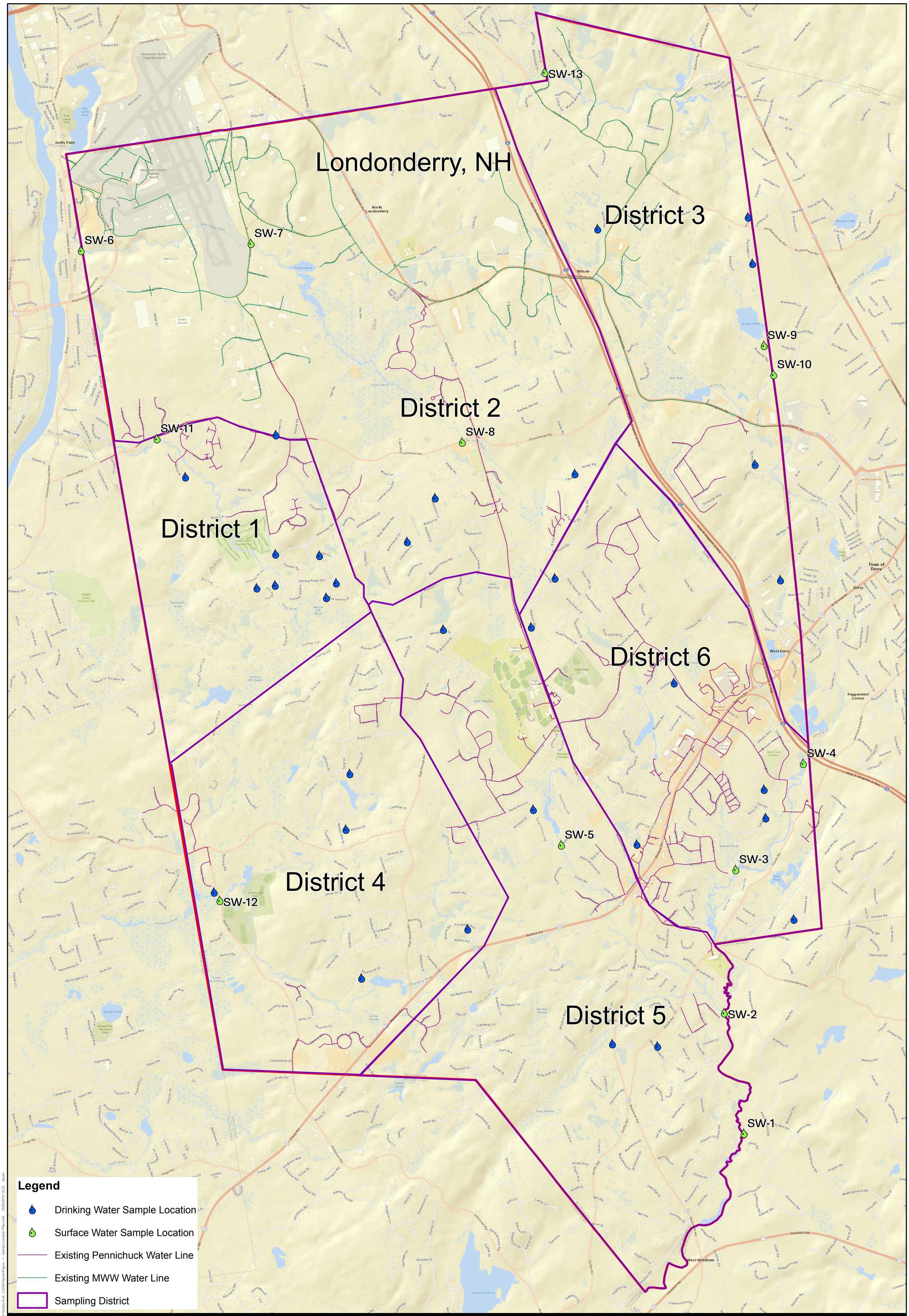
TABLE 4
SUMMARY OF SURFACE WATER PFAS ANALYSES
Water Quality Sampling Program
Londonderry, New Hampshire
Nobis Project No. 95160.00

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)		Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	Perfluorohexanoic Acid (PFHxA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorononanoic Acid (PFNA)	Perfluorodecanoic Acid (PFDA)	Perfluoroundecanoic Acid (PFUnA)	Perfluorododecanoic Acid (PFDoA)	Perfluorotridecanoic Acid (PFTRDA)	Perfluorotetradecanoic Acid (PFTEDA)	Perflourobutane Sulfonate (PFBS)	Perfluorohexane sulfonate (PFHxS)	Perfluoroheptane Sulfonic Acid (PFHpS)	Perfluorooctane Sulfonate (PFOS)	Perfluorodecane Sulfonate (PFDS)	N-methylperflourooctanesulfonamideoacetic acid (NMeFOSAA)	6:2 Fluorotelomer Sulfonate	8:2 Fluorotelomer sulfonate	Perfluoro-n-hexadecanoic acid (PFHxDA)
NHDES AGQS**		ns	ns	ns	ns	12	11	ns	ns	ns	ns	ns	ns	18	ns	15	ns	ns	ns	ns	ns
Location	Date																				
SW-1	5/21/2019	3.3B	3.7	4.3	3.3	12	0.8J	0.3JI	<1.9	<1.9	<1.9	<1.9	2.8	2.0B	<1.9	4.1I	<1.9	<1.9	<9.5	<1.9	<1.9
SW-2	5/21/2019	5.5B	7.2	8.0	5.4	20	1.1J	<1.9	<1.9	<1.9	<1.9	<1.9	3.4	2.7B	<1.9	5.0I	<1.9	<1.9	<9.5	<1.9	<1.9
SW-3	5/21/2019	3.7B	4.2	4.5	2.8	11	1.0J	0.3J	<1.8	<1.8	<1.8	<1.8	3.2	2.7B	<1.9	5.5	<1.8	<1.8	<9.2	<1.8	<1.8
SW-4	5/21/2019	3.2B	3.9	4.5	2.7	9.8	0.8J	0.4J	<1.9	<1.9	<1.9	<1.9	3.1	2.6B	<1.9	4.6	<1.9	<1.9	<9.5	<1.9	<1.9
SW-5	5/21/2019	4.8B	6.5	7.8	5.7	22	1.5J	<1.9	<1.9	<1.9	<1.9	<1.9	2.6	3.6B	0.2JI	7.4	<1.9	<1.9	<9.3	<1.9	<1.9
SW-6	6/11/2019	8.8B	14	16	9.0	33	3.6	0.9J	<1.9	<1.9	<1.9	<1.9	4.4	7.7B	<1.9	14	<1.9	<1.9	4.1J	1.7J	<1.9
SW-7	6/11/2019	7.2B	9.3	10	6.3	30	2.2	0.7JI	<2	<2	<2	<2	4.8	6.3B	<2	14	<2	<2	<9.9	<2	<2
SW-8	6/11/2019	4.9B	4.9	6.3	5.0	27	1.1J	<2	<2	<2	<2	<2	3.8	2.7B	<2	5.5	<2	<2	<9.8	<2	<2
SW-9	5/21/2019	3.3B	3.6	4.5	2.9	12	1.0J	0.3JI	<1.9	<1.9	<1.9	<1.9	2.8	2.0B	<1.9	3.9	<1.9	<1.9	<9.5	<1.9	<1.9
SW-10	6/11/2019	4.6B	4.3	5.2	3.3	12	1.1JI	0.4J	<1.9	<1.9	<1.9	<1.9	2.8	2.2B	<1.9	4.2	<1.9	<1.9	<9.5	<1.9	<1.9
SW-11	6/12/2019	5.8B	7.3	8.9	7.4	42	1.2J	0.3J	<1.9	<1.9	<1.9	<1.9	3.5	2.6B	<1.9	3.9	<1.9	<1.9	<9.6	<1.9	<1.9
SW-12	6/12/2019	5.3B	5.0	6.3	4.4	24	1.0J	<2	<2	<2	<2	<2	3.2	2.0B	<2	4.0	<2	<2	<9.9	<2	<2
SW-13	6/11/2019	3.2B	3.5	3.7	2.8	11	0.9J	0.4J	<2	<2	<2	<2	2.3	1.8JB	<2	3.8	<2	<2	<9.8	<2	<2

Notes:
1. All samples were collected by Nobis Group on the dates indicated.
2. All concentrations are reported in ng/L, equivalent to parts per trillion (ppt), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in Bold indicate a detection, Bold and Shaded indicate exceedances of applicable AGQS. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. The analyses were performed by Eurofins/Test America Laboratory of Sacramento, California by EPA Method 537 (mod) for PFAS.
5. Surface water quality standards (SWQS) have not been developed for PFAS at this time.

**AGQS are not directly applicable to surface water and provided simply for comparison purposes
Qualifiers: B - Compound also found in method blank; J - Less than RL but > or = to the MDL; I - Value is estimated maximum possible concentration

FIGURES



Notes:

1. Locations of site features and sample locations depicted hereon are approximate and given for illustrative purposes only.
2. Sample Location Plan developed from observations made by Nobis, basemap provided by ESRI.

0 825 1,650 3,300
Feet
1 inch = 1,650 feet

N

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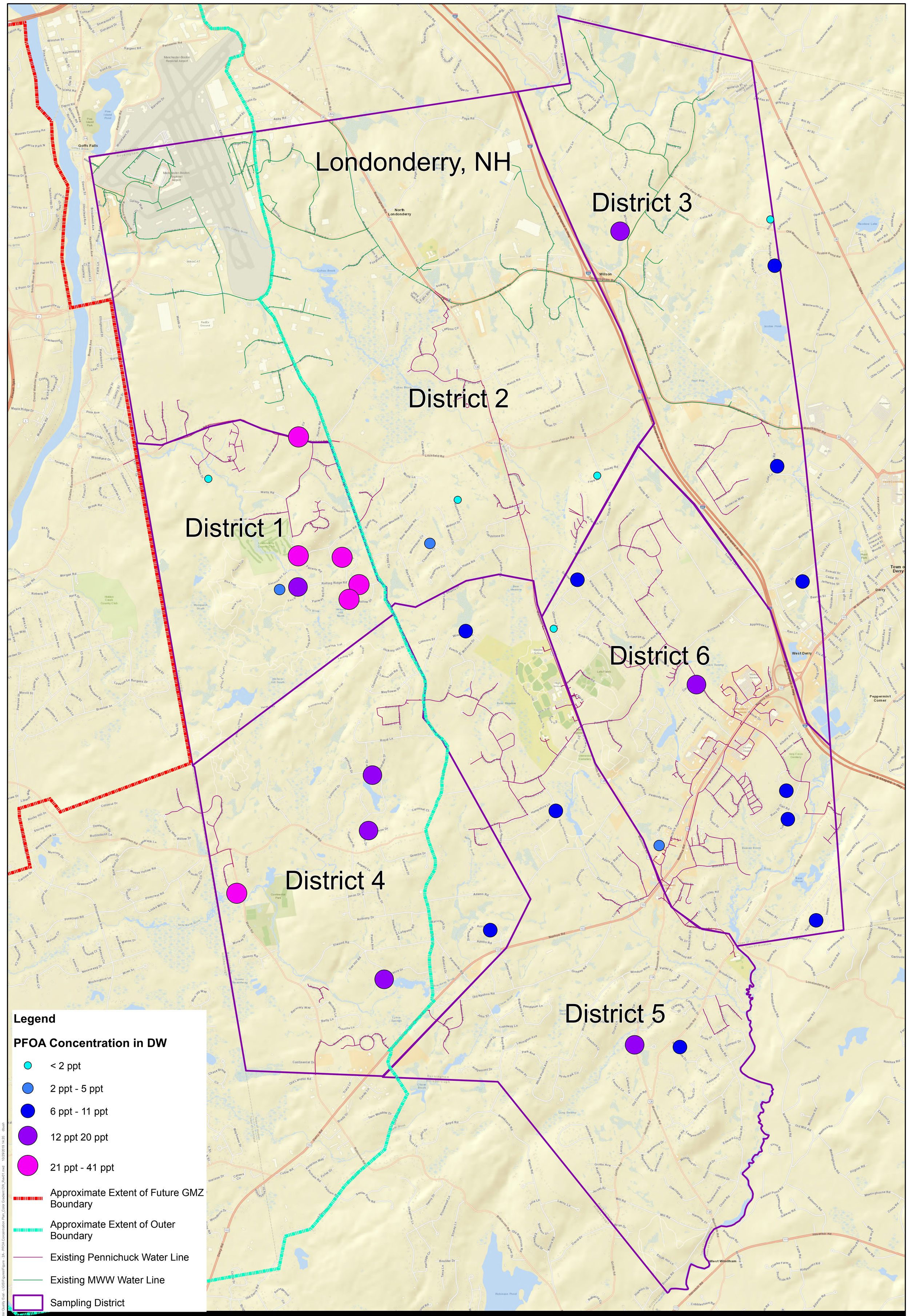
FIGURE 1 - SAMPLE LOCATION PLAN

DRINKING WATER & SURFACE WATER
SAMPLE LOCATION PLAN
LONDONDERRY WATER QUALITY
EVALUATION
LONDONDERRY, NEW HAMPSHIRE

PREPARED BY: DHB	CHECKED BY: MRH
PROJECT NO. 95160.00	DATE: OCTOBER 2019

J:\95160.00 - Londonderry Groundwater Quality Eval - LI\GIS\Figures\Figure - 1 - Sample Location Plan.mxd 10/29/2019 15:23 dbush



Notes:

1. Locations of site features and sample locations depicted hereon are approximate and given for illustrative purposes only. Area Sketch developed from data collected by Nobis, basemap provided by ESRI.

2. PFOA concentrations are given in parts per trillion (ppt). The New Hampshire Department of Environmental Services (NHDES) Ambient Groundwater Quality Standard (AGQS) for PFOA is 12 ppt.

3. Approximate Extent of Future GMZ Boundary and Approximate Extent of Outer Boundary adapted from: NHDES Exhibit C, Preliminary GMZ and Outer Boundary Plan, State of New Hampshire, Dept. of Environmental Services v. Saint-Goibain Performance Plastics Corporation Consent Decree.

0 825 1,650 3,300
Feet
1 inch = 1,650 feet

N

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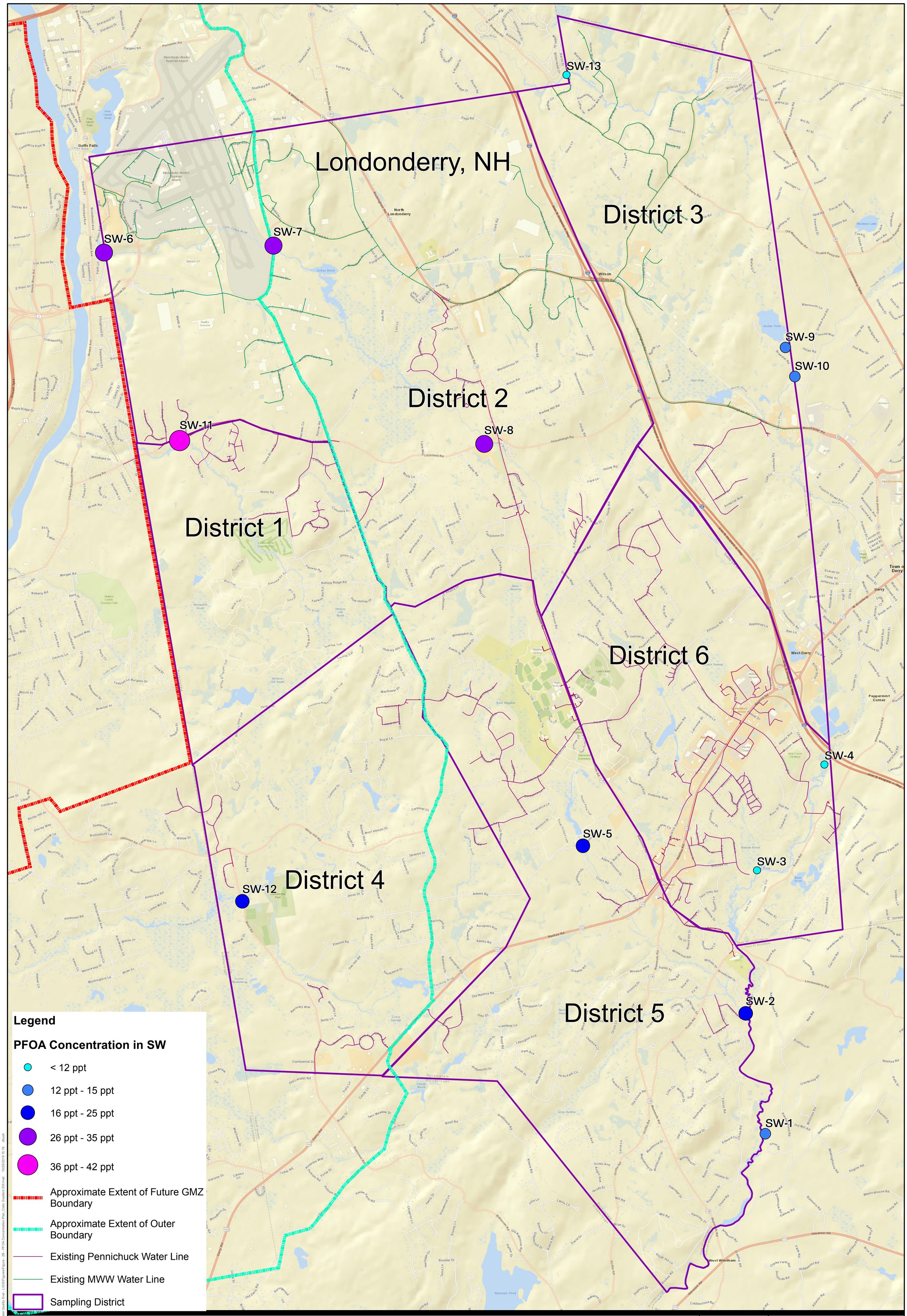
FIGURE 2A - AREA SKETCH

PFOA CONCENTRATIONS IN DW
LONDONDERRY WATER QUALITY EVALUATION
LONDONDERRY, NEW HAMPSHIRE

PREPARED BY: DHB	CHECKED BY: MRH
PROJECT NO. 95160.00	DATE: OCTOBER 2019

J:\95160.00 - Londonderry Groundwater Quality Eval - LG\GIS\Figures\Figure - 2A - PFOA Concentration Plan_Color Gradient DW_Rev01.mxd 10/29/2019 14:20 dbush



Notes:

1. Locations of site features and sample locations depicted hereon are approximate and given for illustrative purposes only. Area Sketch developed from data collected by Nobis, basemap provided by ESRI.
2. PFOA concentrations are given in parts per trillion (ppt). The New Hampshire Department of Environmental Services (NHDES) Ambient Groundwater Quality Standard (AGQS) for PFOA is 12 ppt.
3. Approximate Extent of Future GMZ Boundary and Approximate Extent of Outer Boundary adapted from: NHDES Exhibit C, Preliminary GMZ and Outer Boundary Plan, State of New Hampshire, Dept. of Environmental Services v. Saint-Goibain Performance Plastics Corporation Consent Decree.

0 825 1,650 3,300
Feet
1 inch = 1,650 feet

N

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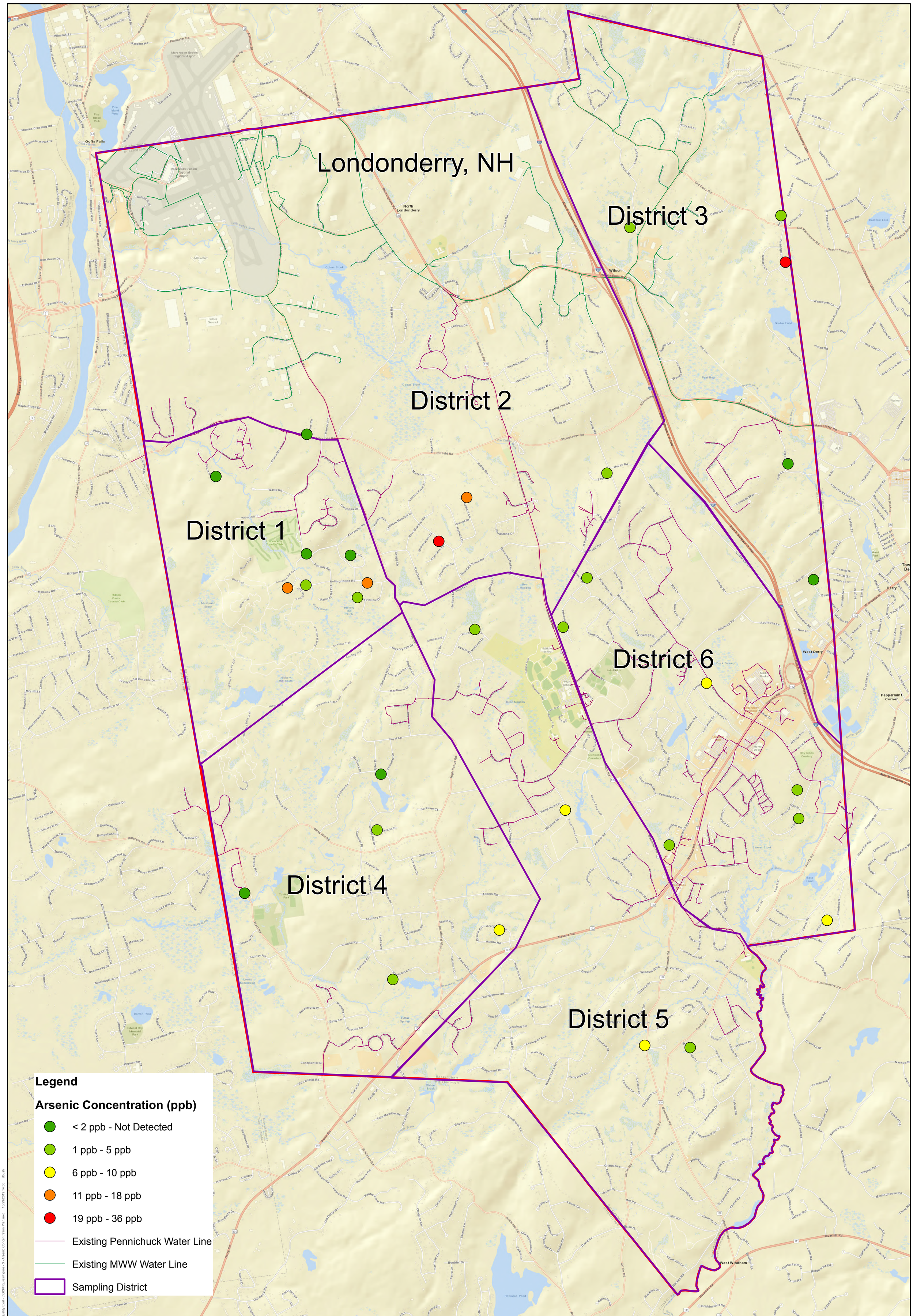
Concord, NH 03301 - (603) 224-4182
www.nobis-group.com

FIGURE 2B - AREA SKETCH

PFOA CONCENTRATIONS IN SW
LONDONDERRY WATER QUALITY EVALUATION
LONDONDERRY, NEW HAMPSHIRE

PREPARED BY: DHB	CHECKED BY: MRH
PROJECT NO. 95160.00	DATE: OCTOBER 2019

J:\95160.00 - Londonderry Groundwater Quality Eval - LG\GIS\Figures\Figure - 2B - PFOA Concentration Plan_Color Gradient SW.mxd 10/29/2019 15:16 dbush



Notes:

1. Locations of site features and sample locations depicted hereon are approximate and given for illustrative purposes only.

2. Arsenic concentrations within drinking water are given in parts per billion (ppb). The New Hampshire Department of Environmental Services (NHDES) Ambient Groundwater Quality Standard (AGQS) for arsenic is 5 ppb.

3. Area Sketch developed from data collected by Nobis, basemap provided by ESRI.

0 825 1,650 3,300
Feet
1 inch = 1,650 feet

N

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Concord, NH 03301 - (603) 224-4182
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FIGURE 3 - AREA SKETCH

ARSENIC CONCENTRATIONS
LONDONDERRY WATER QUALITY
EVALUATION
LONDONDERRY, NEW HAMPSHIRE

PREPARED BY: DHB	CHECKED BY: MRH
PROJECT NO. 95160.00	DATE: OCTOBER 2019

J:\95160.00 - Londonderry Groundwater Quality Eval - LI\GIS\Figures\Figure_3 - Arsenic Concentration Plan.mxd 10/29/2019 14:38 dbush

APPENDICES

APPENDIX A

LIMITATIONS

1) These environmental services were performed in accordance with generally accepted practices of other consultants undertaking similar assessments at the same time and in the same geographical area. The results of this assessment are based on our professional judgment and are not scientific certainties. Specifically, Nobis Group® does not and cannot represent that the site contains no hazardous wastes, oil or other latent conditions beyond those observed during this assessment. No other warranty, express or implied, is made.

2) The observations and conclusions presented in this report were made solely on the basis of conditions described in the report and not on scientific tasks or procedures beyond the scope of described services or the budgetary and time constraints imposed by the client.

3) Observations were made of the site as indicated in this report. Where access to portions of the site was unavailable or limited, Nobis Group® renders no opinion as to the presence of hazardous wastes or the presence of indirect evidence of hazardous wastes in that portion of the site.

4) No property boundary, site feature or topographic surveys of the site were performed by Nobis Group® unless specifically indicated in the text of the report.

5) Chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site. In addition, where any analyses have been conducted by an outside laboratory, Nobis Group® has relied upon the data provided and has not conducted an independent evaluation of the reliability of these data.

6) This report has been prepared for the exclusive use for Town of Londonderry solely for use in an environmental evaluation of the site. This report shall not, in whole or in part, be conveyed to any other party, other than the identified users without prior written consent of Nobis Group®.

APPENDIX B

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, May 20, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry
Control #: 19050127

Lab ID: 19050127
Date Received: 5/7/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry

Lab ID: 19050127
Date: 5/20/2019

Lab ID: 19050127

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050127-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 199 NE Hollow Dr Londonderry NH

Analytical Results

Lab ID: 19050127
Date: 5/21/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-004	NOB_041	5/2/2019 12:50:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/16/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-004	NOB_041	5/2/2019 12:50:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/16/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/16/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/16/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/16/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50156-4
Laboratory SDG: 19 Pine Hollow Dr - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
5/30/2019 8:19:04 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-4
Project/Site: TrustFund_Londonderry
SDG: 19 Pine Hollow Dr - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50156-4

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50156-4

Receipt
The samples were received on 5/9/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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 sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_041 (320-50156-4).

Method Code: 3535 PFC
preparation batch 320-294903

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

Client Sample ID: NOB_041

Lab Sample ID: 320-50156-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.2	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.9		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.5		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.3		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	23		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.42	J	1.9	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.3		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.9	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

Client Sample ID: NOB_041

Date Collected: 05/02/19 12:50
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-4

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.2**	**B**	1.9	0.33	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluoropentanoic acid (PFPeA)	**3.9**		1.9	0.46	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorohexanoic acid (PFHxA)	**5.5**		1.9	0.55	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluoroheptanoic acid (PFHpA)	**5.3**		1.9	0.24	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorooctanoic acid (PFOA)	**23**		1.9	0.80	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorononanoic acid (PFNA)	**0.42**	**J**	1.9	0.25	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorobutanesulfonic acid (PFBS)	**3.3**		1.9	0.19	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorohexanesulfonic acid (PFHxS)	**1.9**	**B**	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorooctanesulfonic acid (PFOS)	**3.3**	**I**	1.9	0.51	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 22:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		05/16/19 09:47	05/26/19 22:47	1
6:2 FTS	ND		9.4	1.9	ng/L		05/16/19 09:47	05/26/19 22:47	1
8:2 FTS	ND		1.9	0.35	ng/L		05/16/19 09:47	05/26/19 22:47	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/16/19 09:47	05/26/19 22:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C4 PFHpA	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C4 PFOA	*99*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C2 PFDA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C2 PFUnA	*104*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C2 PFDoA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C2 PFTeDA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C2 PFHxDA	*59*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
18O2 PFHxS	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
M2-6:2 FTS	*88*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*
M2-8:2 FTS	*106*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:47*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50156-4	NOB_041	87	95	91	92	99	96	101	104
LCS 320-294903/2-A	Lab Control Sample	85	92	89	87	94	93	93	96
LCSD 320-294903/3-A	Lab Control Sample Dup	88	93	91	91	97	97	98	101
MB 320-294903/1-A	Method Blank	91	100	91	97	96	101	105	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50156-4	NOB_041	101	96	100	59	97	96	95	88
LCS 320-294903/2-A	Lab Control Sample	100	92	93	55	89	94	91	83
LCSD 320-294903/3-A	Lab Control Sample Dup	98	101	98	55	91	98	101	93
MB 320-294903/1-A	Method Blank	105	101	100	55	95	95	97	96

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50156-4	NOB_041	106
LCS 320-294903/2-A	Lab Control Sample	101
LCSD 320-294903/3-A	Lab Control Sample Dup	105
MB 320-294903/1-A	Method Blank	115

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-294903/1-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.772	J	2.0	0.35	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.341	J	2.0	0.17	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/16/19 09:47	05/26/19 21:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/16/19 09:47	05/26/19 21:03	1
6:2 FTS	ND		10	2.0	ng/L		05/16/19 09:47	05/26/19 21:03	1
8:2 FTS	ND		2.0	0.38	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/16/19 09:47	05/26/19 21:03	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFPeA	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFHpA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFUnA	*103*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDoA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFTeDA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxDA	*55*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-6:2 FTS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-8:2 FTS	*115*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	36.3		ng/L		91	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	43.9		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.8		ng/L		102	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.6		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.9		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	45.6		ng/L		114	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	44.3		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.0		ng/L		110	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.1		ng/L		95	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.9		ng/L		104	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	67 - 127
6:2 FTS	37.9	41.5		ng/L		109	66 - 126
8:2 FTS	38.3	41.1		ng/L		107	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.3		ng/L		98	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*92*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*87*		*50 - 150*
13C4 PFOA	*94*		*50 - 150*
13C5 PFNA	*93*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*92*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*89*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*83*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-294903/3-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)			40.0	38.5		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.5		ng/L		99	66 - 126	11	30
Perfluorooctanoic acid (PFOA)			40.0	40.3		ng/L		101	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.7		ng/L		99	68 - 128	7	30
Perfluorodecanoic acid (PFDA)			40.0	38.4		ng/L		96	69 - 129	9	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	60 - 120	13	30
Perfluorododecanoic acid (PFDoA)			40.0	41.0		ng/L		102	71 - 131	8	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.5		ng/L		106	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.3		ng/L		88	68 - 128	8	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.7		ng/L		101	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.7		ng/L		95	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.1		ng/L		100	68 - 128	7	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.4		ng/L		98	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.0		ng/L		104	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	37.4		ng/L		93	67 - 127	12	30
6:2 FTS			37.9	36.5		ng/L		96	66 - 126	13	30
8:2 FTS			38.3	38.0		ng/L		99	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.2		ng/L		103	72 - 132	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*88*		*50 - 150*
13C5 PFPeA	*93*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*97*		*50 - 150*
13C2 PFDA	*98*		*50 - 150*
13C2 PFUnA	*101*		*50 - 150*
13C2 PFDoA	*98*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*98*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*98*		*50 - 150*
d3-NMeFOSAA	*101*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*105*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

LCMS

Prep Batch: 294903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-4	NOB_041	Total/NA	Water	3535	
MB 320-294903/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-4	NOB_041	Total/NA	Water	EPA 537(Mod)	294903
MB 320-294903/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	294903
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	294903
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	294903

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

Client Sample ID: NOB_041

Date Collected: 05/02/19 12:50
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-4

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			265.9 mL	10.00 mL	294903	05/16/19 09:47	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297148	05/26/19 22:47	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-4
Project/Site: TrustFund_Londonderry
SDG: 19 Pine Hollow Dr - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-4
SDG: 19 Pine Hollow Dr - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50156-4	NOB_041	Water	05/02/19 12:50	05/11/19 14:44	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kate Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
FIELD BLANK	5/2/19	0800	G	DW	N		X		
NOB-039, 460 Hesson Rd, Londonderry, NH	5/2/19	1125	G	DW	N		X		
NOB-040, 97 GILCREAST RD, LONDONDERRY, NH	5/2/19	1220	G	DW	N		X		
NOB-041, 19 ~~HOOD FIND~~ Pine Hollow DR, LONDONDERRY, NH	5/2/19	1250	G	DW	N		X		
NOB-042, 15 PARTRIDGE LN, LONDONDERRY, NH	5/2/19	1350	G	DW	N		X		
NOB-043, 21 LAWSON FARMER RD, LONDONDERRY, NH	5/2/19	1420	G	DW	N		X		
Use characters before first comma as station ID									

320-50156 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/3/19 0930	NOB3	NHDES Cold storage (5.1°C)	5/3/19 9:30	NHDES
[signature]	5/7/19 14:10	DES	Shipping cooler 2.9°	5/7/19 14:10	DES
			[signature]	5/9/19 900	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806016
Cooler Temperature(s) °C and Other Remarks: 1.6°C

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-4
SDG Number: 19 Pine Hollow Dr - Londonderry, NH

Login Number: 50156
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190513098

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

13 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119050295.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_039, 46 Otterson, Londonderry, NH**	Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_040, 97 Gilcreast, Londonderry, NH**	Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_041, 19 Pine Hollow, Londonderry, NH**	Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_042, 15 Partridge Lane, Londonderry, NH**	Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_043, 24 Lawson Farm, Londonderry, NH**	Drinking Water	02-May-19 14:20	02-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 13-May-19 17:18

REPORT OF ANALYSIS

sampled Date: 02-May-2019 12:50

119050295.03

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00
NOB_041, 19 Pine Hollow,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.4	1	mg/L	05/06/2019 11:26	SM 4500 NO3 D	SUB2

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/03/2019 16:20	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.002	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	05/03/2019 15:23	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	05/03/2019 15:23	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT

Date Rec'd: 5/2/19 Time Rec'd: 1545 Temp Rec'd: 7.6
Rec'd by: Location:
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (NA)
Bottle: TC___ MINS 40ML ___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

1905-295 (1-5)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: Karl Karlsson
Company: Nobis - Group
Bid Reference: see attached

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved (see attached)	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
All samples taken 5/2 per K. Karlsson - see attached																	Total * RCRA 8												
NOB-039, 46 Otterson, Londonderry, NH	5/2/19 1125	DW	1														X				X								1
NOB-040, 97 Gilcreast, Londonderry, NH	5/2/19 1220	DW	1														X				X								2
NOB-041, 19 Pine Hollow, Londonderry, NH	5/2/19 1230	DW	1														X				X								3
NOB-042, 15 Partridge Lane, Londonderry, NH	5/2/19 1350	DW	1														X				X								4
NOB-043, 21 Lawson Farm, Londonderry, NH	5/2/19 1420	DW	1														X				X								5

Relinquished by:	Date/Time:	Received by:
[signature]	5/2/19 1545 * 5/2/19 aJW	[signature]
Relinquished by:	Date/Time: *see attached	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? (Yes) / No
Containers Intact/Properly Labeled? (Yes) / No
Were samples delivered on ice? (Yes) / No

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, May 20, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry
Control #: 19050127

Lab ID: 19050127
Date Received: 5/7/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry

Lab ID: 19050127
Date: 5/20/2019

Lab ID: 19050127

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050127-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 15 Partridge Ln Londonderry NH

Analytical Results

Lab ID: 19050127
Date: 5/21/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-005	NOB_042	5/2/2019 1:50:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/16/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-005	NOB_042	5/2/2019 1:50:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/16/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/16/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/16/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/16/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50156-5
Laboratory SDG: 15 Patridge Ln - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
5/31/2019 11:28:00 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-5
Project/Site: TrustFund_Londonderry
SDG: 15 Patridge Ln - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50156-5

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50156-5

Receipt
The samples were received on 5/9/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_042 (320-50156-5). The samples were re-analyzed with concurring results. 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. All detection limits are below the lower calibration.

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 sample was preserved in Trizma, the so MB/LCS/LCSD of this batch also contains Trizma: NOB_042 (320-50156-5).

Method Code: 3535 PFC
preparation batch 320-294903

Method(s) 3535: The following sample was observed to be a yellow color and contained sediment prior to extraction: NOB_042 (320-50156-5).

Method Code: 3535 PFC
preparation batch 320-294903

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Client Sample ID: NOB_042

Lab Sample ID: 320-50156-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.4	B	1.9	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.1		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.0		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	7.3		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	9.4		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.68	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.82	J I	1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Client Sample ID: NOB_042

Date Collected: 05/02/19 13:50
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-5

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.4**	**B**	1.9	0.34	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluoropentanoic acid (PFPeA)	**2.1**		1.9	0.47	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorohexanoic acid (PFHxA)	**3.0**		1.9	0.56	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluoroheptanoic acid (PFHpA)	**1.8**	**J**	1.9	0.24	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorooctanoic acid (PFOA)	**7.3**		1.9	0.82	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorobutanesulfonic acid (PFBS)	**9.4**		1.9	0.19	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorohexanesulfonic acid (PFHxS)	**0.68**	**J B**	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorooctanesulfonic acid (PFOS)	**0.82**	**J I**	1.9	0.52	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/16/19 09:47	05/26/19 22:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 22:55	1
6:2 FTS	ND		9.7	1.9	ng/L		05/16/19 09:47	05/26/19 22:55	1
8:2 FTS	ND		1.9	0.36	ng/L		05/16/19 09:47	05/26/19 22:55	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		05/16/19 09:47	05/26/19 22:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C5 PFPeA	*86*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C2 PFHxA	*86*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C4 PFHpA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C4 PFOA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C5 PFNA	*94*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C2 PFDA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C2 PFUnA	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C2 PFDoA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C3 PFBS	*93*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C2 PFHxDA	*43*	*	*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
18O2 PFHxS	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
13C4 PFOS	*85*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
d3-NMeFOSAA	*83*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
M2-6:2 FTS	*87*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*
M2-8:2 FTS	*103*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:55*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50156-5	NOB_042	72	86	86	91	97	94	96	92
LCS 320-294903/2-A	Lab Control Sample	85	92	89	87	94	93	93	96
LCSD 320-294903/3-A	Lab Control Sample Dup	88	93	91	91	97	97	98	101
MB 320-294903/1-A	Method Blank	91	100	91	97	96	101	105	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50156-5	NOB_042	91	87	93	43 *	91	85	83	87
LCS 320-294903/2-A	Lab Control Sample	100	92	93	55	89	94	91	83
LCSD 320-294903/3-A	Lab Control Sample Dup	98	101	98	55	91	98	101	93
MB 320-294903/1-A	Method Blank	105	101	100	55	95	95	97	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (50-150)							
320-50156-5	NOB_042	103							
LCS 320-294903/2-A	Lab Control Sample	101							
LCSD 320-294903/3-A	Lab Control Sample Dup	105							
MB 320-294903/1-A	Method Blank	115							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-294903/1-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.772	J	2.0	0.35	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.341	J	2.0	0.17	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/16/19 09:47	05/26/19 21:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/16/19 09:47	05/26/19 21:03	1
6:2 FTS	ND		10	2.0	ng/L		05/16/19 09:47	05/26/19 21:03	1
8:2 FTS	ND		2.0	0.38	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/16/19 09:47	05/26/19 21:03	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFPeA	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFHpA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFUnA	*103*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDoA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFTeDA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxDA	*55*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-6:2 FTS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-8:2 FTS	*115*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	36.3		ng/L		91	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	43.9		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.8		ng/L		102	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.6		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.9		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	45.6		ng/L		114	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	44.3		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.0		ng/L		110	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.1		ng/L		95	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.9		ng/L		104	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	67 - 127
6:2 FTS	37.9	41.5		ng/L		109	66 - 126
8:2 FTS	38.3	41.1		ng/L		107	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.3		ng/L		98	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*92*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*87*		*50 - 150*
13C4 PFOA	*94*		*50 - 150*
13C5 PFNA	*93*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*92*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*89*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*83*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-294903/3-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)			40.0	38.5		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.5		ng/L		99	66 - 126	11	30
Perfluorooctanoic acid (PFOA)			40.0	40.3		ng/L		101	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.7		ng/L		99	68 - 128	7	30
Perfluorodecanoic acid (PFDA)			40.0	38.4		ng/L		96	69 - 129	9	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	60 - 120	13	30
Perfluorododecanoic acid (PFDoA)			40.0	41.0		ng/L		102	71 - 131	8	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.5		ng/L		106	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.3		ng/L		88	68 - 128	8	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.7		ng/L		101	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.7		ng/L		95	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.1		ng/L		100	68 - 128	7	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.4		ng/L		98	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.0		ng/L		104	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	37.4		ng/L		93	67 - 127	12	30
6:2 FTS			37.9	36.5		ng/L		96	66 - 126	13	30
8:2 FTS			38.3	38.0		ng/L		99	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.2		ng/L		103	72 - 132	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*88*		*50 - 150*
13C5 PFPeA	*93*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*97*		*50 - 150*
13C2 PFDA	*98*		*50 - 150*
13C2 PFUnA	*101*		*50 - 150*
13C2 PFDoA	*98*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*98*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*98*		*50 - 150*
d3-NMeFOSAA	*101*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*105*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

LCMS

Prep Batch: 294903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-5	NOB_042	Total/NA	Water	3535	
MB 320-294903/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-5	NOB_042	Total/NA	Water	EPA 537(Mod)	294903
MB 320-294903/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	294903
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	294903
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	294903

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Client Sample ID: NOB_042

Date Collected: 05/02/19 13:50
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-5

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			258.1 mL	10.00 mL	294903	05/16/19 09:47	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297148	05/26/19 22:55	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-5
Project/Site: TrustFund_Londonderry
SDG: 15 Patridge Ln - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-5
SDG: 15 Patridge Ln - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50156-5	NOB_042	Water	05/02/19 13:50	05/11/19 14:44	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kate Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
FIELD BLANK	5/2/19	0800	G	DW	N		X		
NOB-039, 460 Hesson Rd, Londonderry, NH	5/2/19	1125	G	DW	N		X		
NOB-040, 97 GILCREAST RD, LONDONDERRY, NH	5/2/19	1220	G	DW	N		X		
NOB-041, 19 ~~HOOD PINE~~ Pine Hollow DR, LONDONDERRY, NH	5/2/19	1250	G	DW	N		X		
NOB-042, 15 PARTRIDGE LN, LONDONDERRY, NH	5/2/19	1350	G	DW	N		X		
NOB-043, 21 LAWSON FARMER RD, LONDONDERRY, NH	5/2/19	1420	G	DW	N		X		
Use characters before first comma as station ID									

320-50156 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/3/19 0930	NOB3	NHDES Cold storage (5.1°C)	5/3/19 9:30	NHDES
[signature]	5/7/19 14:10	DES	Shipping cooler 2.9°	5/7/19 14:10	DES
			[signature]	5/9/19 900	ETA-SAC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 806016 | Cooler Temperature(s) °C and Other Remarks: 1.6°C

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-5
SDG Number: 15 Patridge Ln - Londonderry, NH

Login Number: 50156
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190513098

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

13 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119050295.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_039, 46 Otterson, Londonderry, NH**	Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_040, 97 Gilcreast, Londonderry, NH**	Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_041, 19 Pine Hollow, Londonderry, NH**	Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_042, 15 Partridge Lane, Londonderry, NH**	Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_043, 24 Lawson Farm, Londonderry, NH**	Drinking Water	02-May-19 14:20	02-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 13-May-19 17:18

REPORT OF ANALYSIS

sampled Date: 02-May-2019 01:50

119050295.04

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00
NOB_042, 15 Partridge Lane,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/06/2019 11:26	SM 4500 NO3 D	SUB2

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/03/2019 16:20	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	**0.036**	0.001	mg/L	05/10/2019 12:20	EPA 200.8	RT
Barium	0.012	0.01	mg/L	05/10/2019 12:20	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	05/10/2019 12:20	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	05/10/2019 12:20	EPA 200.8	RT
Lead	0.011	0.001	mg/L	05/10/2019 12:20	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	05/10/2019 12:20	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	05/10/2019 12:20	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	05/10/2019 12:20	EPA 200.8	RT

Date Rec'd: 5/2/19 Time Rec'd: 1545 Temp Rec'd: 7.6
Rec'd by: Location:
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (NA)
Bottle: TC___ MINS 40ML ___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

1905-295 (1-5)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: Karl Karlsson
Company: Nobis - Group
Bid Reference: see attached

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved (see attached)	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
All samples taken 5/2 per K. Karlsson - see attached																	Total * RCRA 8												
NOB-039, 46 Otterson, Londonderry, NH	5/2/19 1125	DW	1														X				X								1
NOB-040, 97 Gilcreast, Londonderry, NH	5/2/19 1220	DW	1														X				X								2
NOB-041, 19 Pine Hollow, Londonderry, NH	5/2/19 1230	DW	1														X				X								3
NOB-042, 15 Partridge Lane, Londonderry, NH	5/2/19 1350	DW	1														X				X								4
NOB-043, 21 Lawson Farm, Londonderry, NH	5/2/19 1420	DW	1														X				X								5

Relinquished by:	Date/Time:	Received by:
[signature]	5/2/19 1545 * 5/2/19 aJW	[signature]
Relinquished by:	Date/Time: *see attached	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? (Yes) / No
Containers Intact/Properly Labeled? (Yes) / No
Were samples delivered on ice? (Yes) / No

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No

317 Elm Street
Milford, NH 03055
(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, May 20, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry
Control #: 19050127

Lab ID: 19050127
Date Received: 5/7/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry

Lab ID: 19050127
Date: 5/20/2019

Lab ID: 19050127

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050127-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 21 Lawson Farm Rd Londonderry NH

Analytical Results

Lab ID: 19050127
Date: 5/21/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-006	NOB_043	5/2/2019 2:20:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/16/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-006	NOB_043	5/2/2019 2:20:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/16/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/16/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/16/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/16/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50156-6
Laboratory SDG: 21 Lawson Farm Rd - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
5/30/2019 8:20:41 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-6
Project/Site: TrustFund_Londonderry
SDG: 21 Lawson Farm Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50156-6

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50156-6

Receipt
The samples were received on 5/9/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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 sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_043 (320-50156-6).

Method Code: 3535 PFC
preparation batch 320-294903

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Client Sample ID: NOB_043

Lab Sample ID: 320-50156-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.9	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.66	J	1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.88	J I	1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.29	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.57	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Client Sample ID: NOB_043

Date Collected: 05/02/19 14:20
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-6

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.9**	**B**	1.9	0.33	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluoropentanoic acid (PFPeA)	**0.66**	**J**	1.9	0.46	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorohexanoic acid (PFHxA)	**0.88**	**J I**	1.9	0.55	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluoroheptanoic acid (PFHpA)	**0.29**	**J**	1.9	0.24	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorooctanoic acid (PFOA)	**3.1**		1.9	0.80	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorobutanesulfonic acid (PFBS)	**0.57**	**J**	1.9	0.19	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**	**J B**	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 23:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		05/16/19 09:47	05/26/19 23:03	1
6:2 FTS	ND		9.4	1.9	ng/L		05/16/19 09:47	05/26/19 23:03	1
8:2 FTS	ND		1.9	0.35	ng/L		05/16/19 09:47	05/26/19 23:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/16/19 09:47	05/26/19 23:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C5 PFPeA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C2 PFHxA	*90*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C4 PFHpA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C4 PFOA	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C2 PFDA	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C2 PFUnA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C2 PFTeDA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C3 PFBS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
d3-NMeFOSAA	*88*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
M2-6:2 FTS	*88*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*
M2-8:2 FTS	*108*		*50 - 150*	*05/16/19 09:47*	*05/26/19 23:03*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50156-6	NOB_043	89	91	90	91	92	96	92	97
LCS 320-294903/2-A	Lab Control Sample	85	92	89	87	94	93	93	96
LCSD 320-294903/3-A	Lab Control Sample Dup	88	93	91	91	97	97	98	101
MB 320-294903/1-A	Method Blank	91	100	91	97	96	101	105	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50156-6	NOB_043	95	95	95	51	89	96	88	88
LCS 320-294903/2-A	Lab Control Sample	100	92	93	55	89	94	91	83
LCSD 320-294903/3-A	Lab Control Sample Dup	98	101	98	55	91	98	101	93
MB 320-294903/1-A	Method Blank	105	101	100	55	95	95	97	96

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50156-6	NOB_043	108
LCS 320-294903/2-A	Lab Control Sample	101
LCSD 320-294903/3-A	Lab Control Sample Dup	105
MB 320-294903/1-A	Method Blank	115

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-294903/1-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.772	J	2.0	0.35	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.341	J	2.0	0.17	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/16/19 09:47	05/26/19 21:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/16/19 09:47	05/26/19 21:03	1
6:2 FTS	ND		10	2.0	ng/L		05/16/19 09:47	05/26/19 21:03	1
8:2 FTS	ND		2.0	0.38	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/16/19 09:47	05/26/19 21:03	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFPeA	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFHpA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFUnA	*103*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDoA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFTeDA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxDA	*55*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-6:2 FTS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-8:2 FTS	*115*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	36.3		ng/L		91	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	43.9		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.8		ng/L		102	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.6		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.9		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	45.6		ng/L		114	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	44.3		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.0		ng/L		110	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.1		ng/L		95	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.9		ng/L		104	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	67 - 127
6:2 FTS	37.9	41.5		ng/L		109	66 - 126
8:2 FTS	38.3	41.1		ng/L		107	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.3		ng/L		98	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*92*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*87*		*50 - 150*
13C4 PFOA	*94*		*50 - 150*
13C5 PFNA	*93*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*92*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*89*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*83*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-294903/3-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)			40.0	38.5		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.5		ng/L		99	66 - 126	11	30
Perfluorooctanoic acid (PFOA)			40.0	40.3		ng/L		101	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.7		ng/L		99	68 - 128	7	30
Perfluorodecanoic acid (PFDA)			40.0	38.4		ng/L		96	69 - 129	9	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	60 - 120	13	30
Perfluorododecanoic acid (PFDoA)			40.0	41.0		ng/L		102	71 - 131	8	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.5		ng/L		106	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.3		ng/L		88	68 - 128	8	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.7		ng/L		101	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.7		ng/L		95	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.1		ng/L		100	68 - 128	7	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.4		ng/L		98	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.0		ng/L		104	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	37.4		ng/L		93	67 - 127	12	30
6:2 FTS			37.9	36.5		ng/L		96	66 - 126	13	30
8:2 FTS			38.3	38.0		ng/L		99	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.2		ng/L		103	72 - 132	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*88*		*50 - 150*
13C5 PFPeA	*93*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*97*		*50 - 150*
13C2 PFDA	*98*		*50 - 150*
13C2 PFUnA	*101*		*50 - 150*
13C2 PFDoA	*98*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*98*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*98*		*50 - 150*
d3-NMeFOSAA	*101*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*105*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

LCMS

Prep Batch: 294903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-6	NOB_043	Total/NA	Water	3535	
MB 320-294903/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-6	NOB_043	Total/NA	Water	EPA 537(Mod)	294903
MB 320-294903/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	294903
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	294903
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	294903

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Client Sample ID: NOB_043

Date Collected: 05/02/19 14:20
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-6

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			265.9 mL	10.00 mL	294903	05/16/19 09:47	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297148	05/26/19 23:03	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-6
Project/Site: TrustFund_Londonderry
SDG: 21 Lawson Farm Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-6
SDG: 21 Lawson Farm Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50156-6	NOB_043	Water	05/02/19 14:20	05/11/19 14:44	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: KARL KARLSSON	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
FIELD BLANK	5/2/19	0800	G	DW	N		X		
NOB-039, 460 Hesson Rd, Londonderry, NH	5/2/19	1125	G	DW	N		X		
NOB-040, 97 GILCREAST RD, LONDONDERRY, NH	5/2/19	1220	G	DW	N		X		
NOB-041, 19 ~~HOLLOW PINE DR~~ Pine Hollow, LONDONDERRY, NH	5/2/19	1250	G	DW	N		X		
NOB-042, 15 PARTRIDGE LN, LONDONDERRY, NH	5/2/19	1350	G	DW	N		X		
NOB-043, 21 LAWSON FARM RD, LONDONDERRY, NH	5/2/19	1420	G	DW	N		X		
Use characters before first comma as station ID									

320-50156 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/3/19 0930	NOB3	NHDES Cold Storage (5.1°C)	5/3/19 9:30	NHDES
	5/7/19 14:10	DES	Shipping cooler 2.9°	5/7/19 14:10	DES
				5/9/19 900	ETA-SAC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 806016 | Cooler Temperature(s) °C and Other Remarks: 1.6°C

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-6
SDG Number: 21 Lawson Farm Rd - Londonderry, NH

Login Number: 50156
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190513098

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.: 13 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119050295.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_039, 46 Otterson, Londonderry, NH**	Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_040, 97 Gilcreast, Londonderry, NH**	Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_041, 19 Pine Hollow, Londonderry, NH**	Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_042, 15 Partridge Lane, Londonderry, NH**	Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_043, 24 Lawson Farm, Londonderry, NH**	Drinking Water	02-May-19 14:20	02-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 13-May-19 17:18

REPORT OF ANALYSIS

sampled Date: 02-May-2019 02:20

119050295.05

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00
NOB_043, 24 Lawson Farm,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/06/2019 11:26	SM 4500 NO3 D	SUB2

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/03/2019 16:20	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	**0.034**	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Barium	0.011	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Lead	0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	05/03/2019 15:23	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	05/03/2019 15:23	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT

Date Rec'd: 5/2/19 Time Rec'd: 1545 Temp Rec'd: 7.6
Rec'd by: Location:
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (NA)
Bottle: TC___ MINS 40ML ___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

1ABS-295 (1-5)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: Karl Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time (All samples taken 5/2 per K. Karlsson - see attached)	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508.1 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved (see attached)	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-039, 4 Hotchkiss, Londonderry, NH	5/2/19 1125	DW	1														X				X								1
NOB-040, 97 Gilcreast, Londonderry, NH	5/2/19 1220	DW	1														X				X								2
NOB-041, 19 Pine Hollow, Londonderry, NH	5/2/19 1230	DW	1														X				X								3
NOB-042, 15 Partridge Chase, Londonderry, NH	5/2/19 1350	DW	1														X				X								4
NOB-043, 21 Lawson Farm, Londonderry, NH	5/2/19 1420	DW	1														X				X								5

Relinquished by:	Date/Time:	Received by:
[signature]	5/2/19 1545	[signature]
Relinquished by:	Date/Time: *see attached	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? (Yes) / No
Containers Intact/Properly Labeled? (Yes) / No
Were samples delivered on ice? (Yes) / No

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050350

Lab ID: 19050350
Date Received: 5/21/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050350
Date: 6/10/2019

Lab ID: 19050350

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050350-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 39 Rollingridge Rd Londonderry NH

Analytical Results

Lab ID: 19050350
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-002	NOB_047	5/15/2019 9:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB

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Milford, NH 03055
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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-002	NOB_047	5/15/2019 9:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/28/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/28/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/28/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/28/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50559-1
Laboratory SDG: 39 Rolling Ridge Rd - Londonderry, NH
Client Project/Site: DWGTF Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:49:11 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50559-1
Project/Site: DWGTF Londonderry
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50559-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50559-1

Receipt
The samples were received on 5/22/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) 13C2 PFHxDA recovery associated with the following samples is below the method recommended limit: NOB_047 (320-50559-1), (LCS 320-297630/2-A), (LCSD 320-297630/3-A) and (MB 320-297630/1-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. The samples were re-analyzed with concurring results and reported with narration. All detection limits are below the lower calibration.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-297630.

Method Code: 3535 PFC

Method(s) 3535: The following sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_047 (320-50559-1).

Method Code: 3535 PFC
preparation batch 320-297630

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_047

Lab Sample ID: 320-50559-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.2	J	2.0	0.35	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.70	J	2.0	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.5	J	2.0	0.58	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	13		2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.84	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.0	J B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	J	2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_047

Date Collected: 05/15/19 09:15
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-1

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.2**	**J**	2.0	0.35	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluoropentanoic acid (PFPeA)	**0.70**	**J**	2.0	0.49	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorohexanoic acid (PFHxA)	**1.5**	**J**	2.0	0.58	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluoroheptanoic acid (PFHpA)	**2.1**		2.0	0.25	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorooctanoic acid (PFOA)	**13**		2.0	0.84	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorobutanesulfonic acid (PFBS)	**0.84**	**J**	2.0	0.20	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorohexanesulfonic acid (PFHxS)	**1.0**	**J B**	2.0	0.17	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**	**J**	2.0	0.54	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/29/19 06:30	05/31/19 02:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/29/19 06:30	05/31/19 02:18	1
6:2 FTS	ND		9.9	2.0	ng/L		05/29/19 06:30	05/31/19 02:18	1
8:2 FTS	ND		2.0	0.37	ng/L		05/29/19 06:30	05/31/19 02:18	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.88	ng/L		05/29/19 06:30	05/31/19 02:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C2 PFHxA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C4 PFHpA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C5 PFNA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C2 PFDA	*105*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C2 PFDoA	*94*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C2 PFTeDA	*91*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C3 PFBS	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C2 PFHxDA	*54*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
18O2 PFHxS	*88*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
13C4 PFOS	*90*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
M2-6:2 FTS	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:18*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50559-1	NOB_047	87	95	93	93	96	98	105	98
LCS 320-297630/2-A	Lab Control Sample	90	98	97	99	99	100	91	95
LCSD 320-297630/3-A	Lab Control Sample Dup	90	95	94	92	96	102	95	96
MB 320-297630/1-A	Method Blank	89	95	89	95	95	101	100	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50559-1	NOB_047	94	91	95	54	88	90	98	101
LCS 320-297630/2-A	Lab Control Sample	95	87	87	47 *	95	91	95	94
LCSD 320-297630/3-A	Lab Control Sample Dup	95	88	90	38 *	84	90	92	99
MB 320-297630/1-A	Method Blank	93	82	92	39 *	89	96	95	98

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50559-1	NOB_047	100
LCS 320-297630/2-A	Lab Control Sample	101
LCSD 320-297630/3-A	Lab Control Sample Dup	95
MB 320-297630/1-A	Method Blank	93

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-297630/1-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	0.320	J	2.0	0.17	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/29/19 06:30	05/31/19 01:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/29/19 06:30	05/31/19 01:37	1
6:2 FTS	ND		10	2.0	ng/L		05/29/19 06:30	05/31/19 01:37	1
8:2 FTS	ND		2.0	0.38	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/29/19 06:30	05/31/19 01:37	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFHpA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDA	*100*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDoA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxDA	*39*	*	*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-6:2 FTS	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-8:2 FTS	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.3		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.1		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	37.5		ng/L		94	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	42.4		ng/L		106	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.8		ng/L		99	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.7		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.0		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	41.8		ng/L		104	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.4		ng/L		86	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6		ng/L		112	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.1		ng/L		88	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L		105	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	33.8		ng/L		91	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.0		ng/L		101	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.8		ng/L		97	67 - 127
6:2 FTS	37.9	36.0		ng/L		95	66 - 126
8:2 FTS	38.3	36.3		ng/L		95	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.4		ng/L		94	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*98*		*50 - 150*
13C2 PFHxA	*97*		*50 - 150*
13C4 PFHpA	*99*		*50 - 150*
13C4 PFOA	*99*		*50 - 150*
13C5 PFNA	*100*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*87*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*47*	*	*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-297630/3-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297630

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.5		ng/L		104	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	37.8		ng/L		94	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	8	30
Perfluorooctanoic acid (PFOA)			40.0	42.1		ng/L		105	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.0		ng/L		97	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.8		ng/L		102	69 - 129	4	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.8		ng/L		97	60 - 120	3	30
Perfluorododecanoic acid (PFDoA)			40.0	39.6		ng/L		99	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.6		ng/L		106	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.5		ng/L		106	73 - 133	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.5		ng/L		98	63 - 123	10	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.8		ng/L		97	67 - 127	6	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.6		ng/L		97	68 - 128	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	40.7		ng/L		102	67 - 127	5	30
6:2 FTS			37.9	38.0		ng/L		100	66 - 126	5	30
8:2 FTS			38.3	39.4		ng/L		103	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	36.9		ng/L		92	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*95*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*92*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*102*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*88*		*50 - 150*
13C3 PFBS	*90*		*50 - 150*
13C2 PFHxDA	*38*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*90*		*50 - 150*
d3-NMeFOSAA	*92*		*50 - 150*
M2-6:2 FTS	*99*		*50 - 150*
M2-8:2 FTS	*95*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

LCMS

Prep Batch: 297630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-1	NOB_047	Total/NA	Water	3535	
MB 320-297630/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 298173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-1	NOB_047	Total/NA	Water	EPA 537(Mod)	297630
MB 320-297630/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	297630
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	297630
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	297630

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_047

Date Collected: 05/15/19 09:15
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-1

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			251.5 mL	10.00 mL	297630	05/29/19 06:30	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			298173	05/31/19 02:18	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50559-1
Project/Site: DWGTF Londonderry
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-1
SDG: 39 Rolling Ridge Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50559-1	NOB_047	Water	05/15/19 09:15	05/22/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kane Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page: 1 of 1
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-047, 37 Rollinsford, Londonderry, NH	5/15/19	0915	G	DW	N		X	2	
NOB-048, 28 Hazelton, Londonderry, NH	5/15/19	1015	G	DW	N		X	2	
NOB-049, 7 Windsor Dr, Londonderry, NH	5/15/19	1045	G	DW	N		X	2	
NOB-050, 2 Fayette, Londonderry, NH	5/15/19	1135	G	DW	N		X	2	

320-50559 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/15/19 0835	NOB	NHDES Cold Storage	5/17/19 8:45	DES
[signature]	5/21/19 14:00	NHDES	Shipping Cooler 3.8°C	5/21/19 14:00	NHDES
			[signature] 1.6°C	5/22/19 930	EFAW

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

eurofins | Environment Testing TestAmerica

320-50559 Field Sheet

acramento
ving Notes

Job _____

Tracking # 4917 8544 6452 SO / (PO) / FO / 2-Day / Ground / UPS / Courier / GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes: * COC's not returned, bad
ST 5/22/19

Therm. ID: HACCP Corr. Factor: —

Ice ✓ Wet ✗ Gel _____ Other _____

Cooler Custody Seal: Seal

Sample Custody Seal: —

Cooler ID: —

Temp Observed: 1.6 Corrected: —

From: Temp Blank ☐ Sample ☒

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☒
Alkalinity has no headspace?	☐	☐	☒
CoC is complete w/o discrepancies?	☐	☒	☐
Samples received within holding time?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒
Cooler compromised/tampered with?	☐	☒	☐
Samples compromised/tampered with?	☐	☒	☐
Samples w/o discrepancies?	☒	☐	☐
Sample containers have legible labels?	☒	☐	☐
Containers are not broken or leaking?	☒	☐	☐
Sample date/times are provided.	☒	☐	☐
Appropriate containers are used?	☒	☐	☐
Sample bottles are completely filled?	☒	☐	☐
Zero headspace?*	☒	☐	☐
Multiphasic samples are not present?	☒	☐	☐
Sample temp OK?	☒	☐	☐
Sample out of temp?	☐	☒	☐

Initials: ST Date: 5/22/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID:PHDA (603) 271-8483
SHARON LEWANDOWSKI
NHDES MTBE REMEDIATION BUREAU
29 HAZEN DR

CONCORD, NH 033016503
UNITED STATES US

SHIP DATE: 29APR19
ACTWGT: 10.00 LB MAN
CAD: 0562065/CAFE3211

TO SAMPLE RECEIVING
TESTAMERICA WEST SACRAMENTO
880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605
(916) 373-5600
REF: S480-129630

RMA:

FedEx Express

FedEx
TRK# 0221 4917 8544 6452

WED - 22 MAY 10:30A
PRIORITY OVERNIGHT

XH BLUA

95605
CA-US SMF

#3769514 05/21 S65J1/D66C/23AD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
435263

Custody Seal
DATE:
SIGNATURE:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
435263

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50559-1
SDG Number: 39 Rolling Ridge Rd - Londonderry, NH

Login Number: 50559
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	SEAL
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190520065

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

20 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051813.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_047, 39 Rolling Ridge Rd, Londonderry, NH**	Drinking Water	15-May-19 09:15	15-May-19 12:20
119051813.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_048, 28 Hazelnut Ln, Londonderry, NH**	Drinking Water	15-May-19 10:15	15-May-19 12:20
119051813.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_049, 17 Wimbledon Ln, Londonderry, NH**	Drinking Water	15-May-19 10:45	15-May-19 12:20
119051813.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_050, 2 Faye Ln, Londonderry, NH**	Drinking Water	15-May-19 11:35	15-May-19 12:20

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 20-May-19 16:01

REPORT OF ANALYSIS

sampled Date: 15-May-2019 09:15

119051813.01

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
NOB_047, 39 Rolling Ridge Rd,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/15/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/15/2019 17:00	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.002	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Barium	0.025	0.01	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Chromium	0.007	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Lead	0.002	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/17/2019 23:38	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 17:25	EPA 200.8	SUB2

Date Rec'd: 5/15/19 Time Rec'd: 1220 Temp Rec'd: 2.6
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 4 40ML HCL LC OTHER

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

NABS-1813 (1-4)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190520065

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval.
Town/Site: Londonderry
Sampler: E. Karlsson
Company: Nobis
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-047, 7 Hillcrest Rd, Londonderry, NH	5/15/19 0915	DW	1														X				X							1
NOB-048, 28 Hazelnut Ln, Londonderry, NH	5/15/19 1015	DW	1														X				X							2
NOB-049, 7 Thistle Ridge, Londonderry, NH	5/15/19 1115	DW	1														X				X							3
NOB-050, 2 Fox Run, Londonderry, NH	5/15/19 1135	DW	1														X				X							4

Relinquished by:	Date/Time:	Received by:
	5/15/19 1220	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 2.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes ✓ No
EDD required? ____Yes ✓ No
MCP Compliance required? ____Yes ✓ No
Is this NH "Odd Fund" related? ____Yes ✓ No
Does a price quote apply? ✓ Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50559-2
Laboratory SDG: 28 Hazelnut Ln - Londonderry, NH
Client Project/Site: DWGTF Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:50:02 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50559-2
Project/Site: DWGTF Londonderry
SDG: 28 Hazelnut Ln - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50559-2

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50559-2

Receipt
The samples were received on 5/22/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) 13C2 PFHxDA recovery associated with the following samples is below the method recommended limit: NOB_048 (320-50559-2), (LCS 320-297630/2-A), (LCSD 320-297630/3-A) and (MB 320-297630/1-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. The samples were re-analyzed with concurring results and reported with narration. All detection limits are below the lower calibration.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-297630.

Method Code: 3535 PFC

Method(s) 3535: The following sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_048 (320-50559-2).

Method Code: 3535 PFC
preparation batch 320-297630

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Client Sample ID: NOB_048

Lab Sample ID: 320-50559-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.33	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Client Sample ID: NOB_048

Date Collected: 05/15/19 10:15
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-2

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.34	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.47	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorohexanesulfonic acid (PFHxS)	**0.33**	**J B**	1.9	0.16	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/29/19 06:30	05/31/19 02:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/29/19 06:30	05/31/19 02:26	1
6:2 FTS	ND		9.6	1.9	ng/L		05/29/19 06:30	05/31/19 02:26	1
8:2 FTS	ND		1.9	0.36	ng/L		05/29/19 06:30	05/31/19 02:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/29/19 06:30	05/31/19 02:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C5 PFPeA	*90*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C2 PFHxA	*87*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C4 PFHpA	*91*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C5 PFNA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C2 PFDA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C2 PFUnA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C2 PFDoA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C2 PFTeDA	*79*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C3 PFBS	*86*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
18O2 PFHxS	*84*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
13C4 PFOS	*86*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
d3-NMeFOSAA	*86*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
M2-6:2 FTS	*100*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*
M2-8:2 FTS	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:26*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50559-2	NOB_048	89	90	87	91	95	93	93	89
LCS 320-297630/2-A	Lab Control Sample	90	98	97	99	99	100	91	95
LCSD 320-297630/3-A	Lab Control Sample Dup	90	95	94	92	96	102	95	96
MB 320-297630/1-A	Method Blank	89	95	89	95	95	101	100	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50559-2	NOB_048	89	79	86	35 *	84	86	86	100
LCS 320-297630/2-A	Lab Control Sample	95	87	87	47 *	95	91	95	94
LCSD 320-297630/3-A	Lab Control Sample Dup	95	88	90	38 *	84	90	92	99
MB 320-297630/1-A	Method Blank	93	82	92	39 *	89	96	95	98

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50559-2	NOB_048	101
LCS 320-297630/2-A	Lab Control Sample	101
LCSD 320-297630/3-A	Lab Control Sample Dup	95
MB 320-297630/1-A	Method Blank	93

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-297630/1-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	0.320	J	2.0	0.17	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/29/19 06:30	05/31/19 01:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/29/19 06:30	05/31/19 01:37	1
6:2 FTS	ND		10	2.0	ng/L		05/29/19 06:30	05/31/19 01:37	1
8:2 FTS	ND		2.0	0.38	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/29/19 06:30	05/31/19 01:37	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFHpA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDA	*100*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDoA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxDA	*39*	*	*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-6:2 FTS	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-8:2 FTS	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.3		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.1		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	37.5		ng/L		94	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	42.4		ng/L		106	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.8		ng/L		99	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.7		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.0		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	41.8		ng/L		104	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.4		ng/L		86	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6		ng/L		112	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.1		ng/L		88	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L		105	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	33.8		ng/L		91	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.0		ng/L		101	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.8		ng/L		97	67 - 127
6:2 FTS	37.9	36.0		ng/L		95	66 - 126
8:2 FTS	38.3	36.3		ng/L		95	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.4		ng/L		94	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*98*		*50 - 150*
13C2 PFHxA	*97*		*50 - 150*
13C4 PFHpA	*99*		*50 - 150*
13C4 PFOA	*99*		*50 - 150*
13C5 PFNA	*100*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*87*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*47*	*	*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-297630/3-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297630

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.5		ng/L		104	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	37.8		ng/L		94	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	8	30
Perfluorooctanoic acid (PFOA)			40.0	42.1		ng/L		105	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.0		ng/L		97	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.8		ng/L		102	69 - 129	4	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.8		ng/L		97	60 - 120	3	30
Perfluorododecanoic acid (PFDoA)			40.0	39.6		ng/L		99	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.6		ng/L		106	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.5		ng/L		106	73 - 133	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.5		ng/L		98	63 - 123	10	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.8		ng/L		97	67 - 127	6	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.6		ng/L		97	68 - 128	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	40.7		ng/L		102	67 - 127	5	30
6:2 FTS			37.9	38.0		ng/L		100	66 - 126	5	30
8:2 FTS			38.3	39.4		ng/L		103	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	36.9		ng/L		92	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*95*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*92*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*102*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*88*		*50 - 150*
13C3 PFBS	*90*		*50 - 150*
13C2 PFHxDA	*38*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*90*		*50 - 150*
d3-NMeFOSAA	*92*		*50 - 150*
M2-6:2 FTS	*99*		*50 - 150*
M2-8:2 FTS	*95*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

LCMS

Prep Batch: 297630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-2	NOB_048	Total/NA	Water	3535	
MB 320-297630/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 298173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-2	NOB_048	Total/NA	Water	EPA 537(Mod)	297630
MB 320-297630/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	297630
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	297630
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	297630

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Client Sample ID: NOB_048

Date Collected: 05/15/19 10:15
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-2

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			261.1 mL	10.00 mL	297630	05/29/19 06:30	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			298173	05/31/19 02:26	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50559-2
Project/Site: DWGTF Londonderry
SDG: 28 Hazelnut Ln - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-2
SDG: 28 Hazelnut Ln - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50559-2	NOB_048	Water	05/15/19 10:15	05/22/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kane Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page: 1 of 1
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-047, 37 Rollinsford, Londonderry, NH	5/15/19	0915	G	DW	N		X	2	
NOB-048, 28 Hazelton, Londonderry, NH	5/15/19	1015	G	DW	N		X	2	
NOB-049, 7 Windsor Dr, Londonderry, NH	5/15/19	1045	G	DW	N		X	2	
NOB-050, 2 Fayette, Londonderry, NH	5/15/19	1135	G	DW	N		X	2	

320-50559 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/15/19 0835	NOB	NHDES Cold Storage	5/17/19 8:45	DES
[signature]	5/21/19 14:00	NHDES	Shipping Cooler 3.8°C	5/21/19 14:00	NHDES
			[signature] 1.6°C	5/22/19 930	EFAW

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50559-2
SDG Number: 28 Hazelnut Ln - Londonderry, NH

Login Number: 50559
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	SEAL
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190520065

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

20 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051813.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_047, 39 Rolling Ridge Rd, Londonderry, NH**	Drinking Water	15-May-19 09:15	15-May-19 12:20
119051813.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_048, 28 Hazelnut Ln, Londonderry, NH**	Drinking Water	15-May-19 10:15	15-May-19 12:20
119051813.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_049, 17 Wimbledon Ln, Londonderry, NH**	Drinking Water	15-May-19 10:45	15-May-19 12:20
119051813.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_050, 2 Faye Ln, Londonderry, NH**	Drinking Water	15-May-19 11:35	15-May-19 12:20

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190520065

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 20-May-19 16:01

REPORT OF ANALYSIS

sampled Date: 15-May-2019 10:15

119051813.02

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
NOB_048, 28 Hazelnut Ln,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/15/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/15/2019 17:00	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	**0.011**	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Chromium	0.004	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/17/2019 23:38	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 17:25	EPA 200.8	SUB2

Date Rec'd: 5/15/19 Time Rec'd: 1220 Temp Rec'd: 2.6
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 4 40ML HCL LC OTHER

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

NABS-1813 (1-4)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190520065

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval.
Town/Site: Londonderry
Sampler: E. Karlsson
Company: Nobis
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-047, 7 Hillcrest Rd, Londonderry, NH	5/15/19 0915	DW	1														X				X							1
NOB-048, 28 Hazelnut Ln, Londonderry, NH	5/15/19 1015	DW	1														X				X							2
NOB-049, 7 Thistle Ridge, Londonderry, NH	5/15/19 1115	DW	1														X				X							3
NOB-050, 2 Fox Run, Londonderry, NH	5/15/19 1135	DW	1														X				X							4

Relinquished by:	Date/Time:	Received by:
	5/15/19 1220	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 2.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes ✓ No
EDD required? ____Yes ✓ No
MCP Compliance required? ____Yes ✓ No
Is this NH "Odd Fund" related? ____Yes ✓ No
Does a price quote apply? ✓ Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050350

Lab ID: 19050350
Date Received: 5/21/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
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(603) 673-5440
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050350
Date: 6/10/2019

Lab ID: 19050350

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050350-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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(603) 673-5440
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 28 Hazelnut Ln Londonderry NH

Analytical Results

Lab ID: 19050350
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-003	NOB_048	5/15/2019 10:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-003	NOB_048	5/15/2019 10:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/28/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/28/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/28/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/28/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50559-4
Laboratory SDG: 2 Faye Ln - Londonderry, NH
Client Project/Site: DWGTF Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:51:48 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50559-4

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50559-4

Receipt
The samples were received on 5/22/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) 13C2 PFHxDA recovery associated with the following samples is below the method recommended limit: (LCS 320-297630/2-A), (LCSD 320-297630/3-A) and (MB 320-297630/1-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. The samples were re-analyzed with concurring results and reported with narration. All detection limits are below the lower calibration.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-297630.

Method Code: 3535 PFC

Method(s) 3535: The following sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_050 (320-50559-4).

Method Code: 3535 PFC
preparation batch 320-297630

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Client Sample ID: NOB_050

Lab Sample ID: 320-50559-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.94	J	1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.36	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Client Sample ID: NOB_050

Date Collected: 05/15/19 11:35
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-4

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.33	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.47	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorooctanoic acid (PFOA)	**0.94**	**J**	1.9	0.81	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorohexanesulfonic acid (PFHxS)	**0.36**	**J B**	1.9	0.16	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/29/19 06:30	05/31/19 02:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/29/19 06:30	05/31/19 02:42	1
6:2 FTS	ND		9.5	1.9	ng/L		05/29/19 06:30	05/31/19 02:42	1
8:2 FTS	ND		1.9	0.36	ng/L		05/29/19 06:30	05/31/19 02:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/29/19 06:30	05/31/19 02:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C5 PFPeA	*90*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C2 PFHxA	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C4 PFHpA	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C5 PFNA	*94*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C2 PFDA	*97*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C2 PFDoA	*97*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C2 PFTeDA	*85*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C3 PFBS	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C2 PFHxDA	*50*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
18O2 PFHxS	*85*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
13C4 PFOS	*86*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
M2-6:2 FTS	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:42*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50559-4	NOB_050	87	90	92	92	95	94	97	99
LCS 320-297630/2-A	Lab Control Sample	90	98	97	99	99	100	91	95
LCSD 320-297630/3-A	Lab Control Sample Dup	90	95	94	92	96	102	95	96
MB 320-297630/1-A	Method Blank	89	95	89	95	95	101	100	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50559-4	NOB_050	97	85	89	50	85	86	93	101
LCS 320-297630/2-A	Lab Control Sample	95	87	87	47 *	95	91	95	94
LCSD 320-297630/3-A	Lab Control Sample Dup	95	88	90	38 *	84	90	92	99
MB 320-297630/1-A	Method Blank	93	82	92	39 *	89	96	95	98

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50559-4	NOB_050	97
LCS 320-297630/2-A	Lab Control Sample	101
LCSD 320-297630/3-A	Lab Control Sample Dup	95
MB 320-297630/1-A	Method Blank	93

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-297630/1-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	0.320	J	2.0	0.17	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/29/19 06:30	05/31/19 01:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/29/19 06:30	05/31/19 01:37	1
6:2 FTS	ND		10	2.0	ng/L		05/29/19 06:30	05/31/19 01:37	1
8:2 FTS	ND		2.0	0.38	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/29/19 06:30	05/31/19 01:37	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFHpA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDA	*100*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDoA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxDA	*39*	*	*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-6:2 FTS	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-8:2 FTS	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.3		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.1		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	37.5		ng/L		94	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	42.4		ng/L		106	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.8		ng/L		99	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.7		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.0		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	41.8		ng/L		104	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.4		ng/L		86	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6		ng/L		112	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.1		ng/L		88	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L		105	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	33.8		ng/L		91	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.0		ng/L		101	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.8		ng/L		97	67 - 127
6:2 FTS	37.9	36.0		ng/L		95	66 - 126
8:2 FTS	38.3	36.3		ng/L		95	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.4		ng/L		94	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*98*		*50 - 150*
13C2 PFHxA	*97*		*50 - 150*
13C4 PFHpA	*99*		*50 - 150*
13C4 PFOA	*99*		*50 - 150*
13C5 PFNA	*100*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*87*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*47*	*	*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-297630/3-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297630

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.5		ng/L		104	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	37.8		ng/L		94	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	8	30
Perfluorooctanoic acid (PFOA)			40.0	42.1		ng/L		105	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.0		ng/L		97	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.8		ng/L		102	69 - 129	4	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.8		ng/L		97	60 - 120	3	30
Perfluorododecanoic acid (PFDoA)			40.0	39.6		ng/L		99	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.6		ng/L		106	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.5		ng/L		106	73 - 133	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.5		ng/L		98	63 - 123	10	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.8		ng/L		97	67 - 127	6	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.6		ng/L		97	68 - 128	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	40.7		ng/L		102	67 - 127	5	30
6:2 FTS			37.9	38.0		ng/L		100	66 - 126	5	30
8:2 FTS			38.3	39.4		ng/L		103	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	36.9		ng/L		92	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*95*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*92*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*102*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*88*		*50 - 150*
13C3 PFBS	*90*		*50 - 150*
13C2 PFHxDA	*38*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*90*		*50 - 150*
d3-NMeFOSAA	*92*		*50 - 150*
M2-6:2 FTS	*99*		*50 - 150*
M2-8:2 FTS	*95*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

LCMS

Prep Batch: 297630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-4	NOB_050	Total/NA	Water	3535	
MB 320-297630/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 298173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-4	NOB_050	Total/NA	Water	EPA 537(Mod)	297630
MB 320-297630/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	297630
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	297630
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	297630

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Client Sample ID: NOB_050

Date Collected: 05/15/19 11:35
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-4

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			261.9 mL	10.00 mL	297630	05/29/19 06:30	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			298173	05/31/19 02:42	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-4
SDG: 2 Faye Ln - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50559-4	NOB_050	Water	05/15/19 11:35	05/22/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kane Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page: 1 of 1
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-047, 37 Rollinsford, Londonderry, NH	5/15/19	0915	G	DW	N		X	2	
NOB-048, 28 Hazelton, Londonderry, NH	5/15/19	1015	G	DW	N		X	2	
NOB-049, 7 Windsor Dr, Londonderry, NH	5/15/19	1045	G	DW	N		X	2	
NOB-050, 2 Fayette, Londonderry, NH	5/15/19	1135	G	DW	N		X	2	

320-50559 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/15/19 0835	NOB	NHDES Cold Storage	5/17/19 8:45	DES
[signature]	5/21/19 14:00	NHDES	Shipping Cooler 3.8°C	5/21/19 14:00	NHDES
			[signature] 1.6°C	5/22/19 930	EFAW

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50559-4
SDG Number: 2 Faye Ln - Londonderry, NH

Login Number: 50559
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	SEAL
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190520065

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

20 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051813.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_047, 39 Rolling Ridge Rd, Londonderry, NH**	Drinking Water	15-May-19 09:15	15-May-19 12:20
119051813.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_048, 28 Hazelnut Ln, Londonderry, NH**	Drinking Water	15-May-19 10:15	15-May-19 12:20
119051813.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_049, 17 Wimbledon Ln, Londonderry, NH**	Drinking Water	15-May-19 10:45	15-May-19 12:20
119051813.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_050, 2 Faye Ln, Londonderry, NH**	Drinking Water	15-May-19 11:35	15-May-19 12:20

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 20-May-19 16:01

REPORT OF ANALYSIS

119051813.04

Londonderry GW Quality Eval., Londonderry, NH, #95160.00

NOB_050, 2 Faye Ln, Londonderry, NH

sampled Date: 15-May-2019 11:35

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/15/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/15/2019 17:00	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.004	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Chromium	0.002	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Lead	**0.059**	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/17/2019 23:38	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 17:25	EPA 200.8	SUB2

Date Rec'd: 5/15/19 Time Rec'd: 1220 Temp Rec'd: 2.6
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 4 40ML HCL LC OTHER

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

NABS-1813 (1-4)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190520065

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval.
Town/Site: Londonderry
Sampler: E. Karlsson
Company: Nobis
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-047, 7 Hillcrest Rd, Londonderry, NH	5/15/19 0915	DW	1														X				X							1
NOB-048, 28 Hazelnut Ln, Londonderry, NH	5/15/19 1015	DW	1														X				X							2
NOB-049, 7 Thistle Ridge, Londonderry, NH	5/15/19 1115	DW	1														X				X							3
NOB-050, 2 Fox Run, Londonderry, NH	5/15/19 1135	DW	1														X				X							4

Relinquished by:	Date/Time:	Received by:
	5/15/19 1220	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 2.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes ✓ No
EDD required? ____Yes ✓ No
MCP Compliance required? ____Yes ✓ No
Is this NH "Odd Fund" related? ____Yes ✓ No
Does a price quote apply? ✓ Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050350

Lab ID: 19050350
Date Received: 5/21/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050350
Date: 6/10/2019

Lab ID: 19050350

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050350-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 2 Frye Ln Londonderry NH

Analytical Results

Lab ID: 19050350
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-005	NOB_050	5/15/2019 11:35:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-005	NOB_050	5/15/2019 11:35:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/28/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/28/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/28/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/28/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

317 Elm Street
Milford, NH 03055

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Monday, July 01, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060104

Lab ID: 19060104
Date Received: 6/6/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060104
Date: 7/1/2019

Lab ID: 19060104

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060104-001	EPA 524.2	NOB_058	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 114 Litchfield Rd Londonderry, NH

Analytical Results

Lab ID: 19060104
Date: 7/1/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-001	NOB_058	6/3/2019 12:00:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-001	NOB_058	6/3/2019 12:00:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/12/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/12/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/12/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/12/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-1
Laboratory SDG: 114 Litchfield Rd - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 7:58:23 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-1

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_058 (320-51329-1), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_058 (320-51329-1)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_058 (320-51329-1).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Client Sample ID: NOB_058

Lab Sample ID: 320-51329-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.6	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.9		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.8		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.9		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	41		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.42	J I	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.1		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.8	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.18	J	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.9		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Client Sample ID: NOB_058

Date Collected: 06/03/19 12:00
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-1

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.6**	**B**	1.9	0.33	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluoropentanoic acid (PFPeA)	**5.9**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorohexanoic acid (PFHxA)	**7.8**		1.9	0.55	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluoroheptanoic acid (PFHpA)	**5.9**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorooctanoic acid (PFOA)	**41**		1.9	0.81	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorononanoic acid (PFNA)	**0.42**	**J I**	1.9	0.26	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorobutanesulfonic acid (PFBS)	**3.1**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorohexanesulfonic acid (PFHxS)	**3.8**	**B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.18**	**J**	1.9	0.18	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorooctanesulfonic acid (PFOS)	**3.9**		1.9	0.51	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 06:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 06:20	1
6:2 FTS	ND		9.5	1.9	ng/L		06/17/19 06:39	06/18/19 06:20	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 06:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/17/19 06:39	06/18/19 06:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C5 PFPeA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C2 PFHxA	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C4 PFHpA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C4 PFOA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C2 PFTeDA	*72*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C3 PFBS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C2 PFHxDA	*40*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
18O2 PFHxS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
13C4 PFOS	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
d3-NMeFOSAA	*103*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
M2-6:2 FTS	*108*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:20*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-1	NOB_058	73	90	87	90	93	90	94	93
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-1	NOB_058	93	72	87	40 *	86	85	103	108
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-1	NOB_058	97
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-1	NOB_058	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-1	NOB_058	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Client Sample ID: NOB_058

Date Collected: 06/03/19 12:00
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-1

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			262.4 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 06:20	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-1
Project/Site: DWGTF_Londonderry
SDG: 114 Litchfield Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-1
SDG: 114 Litchfield Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-1	NOB_058	Water	06/03/19 12:00	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 6/14/19 ~~1620~~ 915	Company EA DSL

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS	Received by: NOBIS FedEx	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

eurofins | Environment Testing TestAmerica

320-51329 Field Sheet

mento Notes

Job:

Tracking # 4761 6866 7148 SO / PO / FO / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

Therm. ID: AK3 Corr. Factor: ND

Ice ✓ Wet ✓ Gel ____ Other ____

Cooler Custody Seal: 624536

Sample Custody Seal: —

Cooler ID: —

Temp Observed: 1.0°C Corrected: 1.0°C

From: Temp Blank ☐ Sample ☑

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: SO Date: 6/14/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

eurofins | Environment Testing TestAmerica

Sacramento
Sample Receiving Notes

Job: _____

Tracking # 4931 8202 1775 ~~806430~~ SO 6/14/19

SO / PO / FO / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes: _____

Therm. ID: AK 3 Corr. Factor: NO

Ice ✓ Wet ✓ Gel _____ Other _____

Cooler Custody Seal: 806430

Sample Custody Seal: —

Cooler ID: —

Temp Observed: 2.4°C Corrected: 2.4°C

From: Temp Blank ☐ Sample ☐
NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: SO Date: 6/14/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-1
SDG Number: 114 Litchfield Rd - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190611007

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

11 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119060156.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_58**	Drinking Water	03-Jun-19 12:00	03-Jun-19 12:53
119060156.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_59**	Drinking Water	03-Jun-19 12:25	03-Jun-19 12:53

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190611007

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 11-Jun-19 11:16

REPORT OF ANALYSIS

119060156.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_58

sampled Date: 03-Jun-2019 12:00

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/03/2019 15:45	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/03/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/06/2019 15:19	EPA 200.8	RT
Barium	0.016	0.01	mg/L	06/06/2019 15:19	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/06/2019 15:19	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/06/2019 15:19	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/06/2019 15:19	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/06/2019 15:19	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/06/2019 15:19	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/07/2019 15:28	EPA 200.8	RT

RP190611007

AQUARIAN ANALYTICAL 1/A19061-156 (1-2)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: LONDONDERRY WQ EVAL.
Town/Site: LONDONDERRY, NH
Sampler: DHR
Company: NOBIS GROUP
Bid Reference:

Project Manager: MARK HENDERSON
Report To: MARK HENDER
Invoice To: ACCOUNTS PAYABLE
Phone: 603-224-4182
E-mail: MHENDERSON@NOBIS-GROUP.COM

Sample Information

Date Rec'd: 6/3/19 Time Rec'd: 1253 Temp Rec'd: 6.2
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos 2 Neg NA
Bottle: TC__ MIN__40ML__ HCL__LC__ OTHER____

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-58	6/3/19/1200	DW	1														X				X								1
NOB-59	6/3/19/1225	DW	1														X				X								2

Relinquished by:	Date/Time:	Received by:
[signature]	6-3-19/1253	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 6.2 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes X No
EDD required? ____Yes X No
MCP Compliance required? ____Yes X No
Is this NH "Odd Fund" related? ____Yes X No
Does a price quote apply? X Yes ____No

317 Elm Street
Milford, NH 03055

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Fax (603) 673-0366
Sales@chemservelab.com

Monday, July 01, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060104

Lab ID: 19060104
Date Received: 6/6/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060104
Date: 7/1/2019

Lab ID: 19060104

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060104-001	EPA 524.2	NOB_058	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 7 Rolling Ridge Rd Londonderry, NH

Analytical Results

Lab ID: 19060104
Date: 7/1/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-002	NOB_059	6/3/2019 12:25:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-002	NOB_059	6/3/2019 12:25:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/12/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/12/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/12/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/12/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-2
Laboratory SDG: 7 Rolling Ridge Rd - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:00:22 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-2

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-2

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_059 (320-51329-2)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_059 (320-51329-2).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_059

Lab Sample ID: 320-51329-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.7	B	1.9	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.2		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	10		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	7.1		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	40		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.53	J	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.4		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	J I	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	12		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_059

Date Collected: 06/03/19 12:25
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-2

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.7**	**B**	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluoropentanoic acid (PFPeA)	**7.2**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorohexanoic acid (PFHxA)	**10**		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluoroheptanoic acid (PFHpA)	**7.1**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorooctanoic acid (PFOA)	**40**		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorononanoic acid (PFNA)	**1.2**	**J**	1.9	0.26	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorodecanoic acid (PFDA)	**0.53**	**J**	1.9	0.30	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorobutanesulfonic acid (PFBS)	**3.4**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorohexanesulfonic acid (PFHxS)	**2.2**	**B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.23**	**J I**	1.9	0.18	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorooctanesulfonic acid (PFOS)	**12**		1.9	0.52	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 06:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 06:28	1
6:2 FTS	ND		9.6	1.9	ng/L		06/17/19 06:39	06/18/19 06:28	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		06/17/19 06:39	06/18/19 06:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*74*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C5 PFPeA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C4 PFOA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C5 PFNA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C2 PFUnA	*100*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C2 PFDoA	*100*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C2 PFTeDA	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C2 PFHxDA	*68*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
18O2 PFHxS	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
d3-NMeFOSAA	*106*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
M2-6:2 FTS	*108*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*
M2-8:2 FTS	*104*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:28*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-2	NOB_059	74	89	88	96	94	92	97	100
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-2	NOB_059	100	84	91	68	93	86	106	108
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-2	NOB_059	104
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-2	NOB_059	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-2	NOB_059	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_059

Date Collected: 06/03/19 12:25
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-2

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			259.3 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 06:28	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-2
SDG: 7 Rolling Ridge Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-2	NOB_059	Water	06/03/19 12:25	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

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6/27/2019

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-2
SDG Number: 7 Rolling Ridge Rd - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190611007

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

11 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119060156.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_58**	Drinking Water	03-Jun-19 12:00	03-Jun-19 12:53
119060156.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_59**	Drinking Water	03-Jun-19 12:25	03-Jun-19 12:53

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190611007

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 11-Jun-19 11:16

REPORT OF ANALYSIS

119060156.02

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_59

sampled Date: 03-Jun-2019 12:25

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	2.9	1	mg/L	06/03/2019 15:45	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/03/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	**0.011**	0.001	mg/L	06/07/2019 15:28	EPA 200.8	RT
Barium	0.019	0.01	mg/L	06/06/2019 15:19	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/06/2019 15:19	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/10/2019 16:01	EPA 200.8	RT
Lead	**0.038**	0.001	mg/L	06/06/2019 15:19	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/06/2019 15:19	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/06/2019 15:19	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/07/2019 15:28	EPA 200.8	RT

RP190611007

AQUARIAN ANALYTICAL 1/A19061-156 (1-2)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: LONDONDERRY WQ EVAL.
Town/Site: LONDONDERRY, NH
Sampler: DHR
Company: NOBIS GROUP
Bid Reference:

Project Manager: MARK HENDERSON
Report To: MARK HENDER
Invoice To: ACCOUNTS PAYABLE
Phone: 603-224-4182
E-mail: MHENDERSON@NOBIS-GROUP.COM

Sample Information

Date Rec'd: 6/3/19 Time Rec'd: 1253 Temp Rec'd: 6.2
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos 2 Neg NA
Bottle: TC__ MIN__40ML__ HCL__LC__ OTHER____

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-58	6/3/19/1200	DW	1														X				X								1
NOB-59	6/3/19/1225	DW	1														X				X								2

Relinquished by:	Date/Time:	Received by:
[signature]	6-3-19/1253	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 6.2 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes X No
EDD required? ____Yes X No
MCP Compliance required? ____Yes X No
Is this NH "Odd Fund" related? ____Yes X No
Does a price quote apply? X Yes ____No

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-3
Laboratory SDG: 19 Justin Circle - Londonderry, NH
Client Project/Site: DWGTF_Londonderry
Revision: 1

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
8/1/2019 10:09:45 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-3
Project/Site: DWGTF_Londonderry
SDG: 19 Justin Circle - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-3

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-3

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_060 (320-51329-3)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_060 (320-51329-3).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Client Sample ID: NOB_060

Lab Sample ID: 320-51329-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.6	B	2.0	0.35	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.9		2.0	0.58	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.3		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	22		2.0	0.85	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.3		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0	B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5	I	2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Client Sample ID: NOB_060

Date Collected: 06/05/19 09:45
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-3

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.6**	**B**	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluoropentanoic acid (PFPeA)	**2.4**		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorohexanoic acid (PFHxA)	**2.9**		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluoroheptanoic acid (PFHpA)	**3.3**		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorooctanoic acid (PFOA)	**22**		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorobutanesulfonic acid (PFBS)	**6.3**		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorohexanesulfonic acid (PFHxS)	**2.0**	**B**	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorooctanesulfonic acid (PFOS)	**2.5**	**I**	2.0	0.54	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 06:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 06:36	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 06:36	1
8:2 FTS	ND		2.0	0.37	ng/L		06/17/19 06:39	06/18/19 06:36	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 06:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C5 PFPeA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C2 PFHxA	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C4 PFHpA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C4 PFOA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C5 PFNA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C2 PFUnA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C2 PFDoA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C2 PFTeDA	*81*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C3 PFBS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C2 PFHxDA	*62*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
d3-NMeFOSAA	*101*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*
M2-8:2 FTS	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:36*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-3	NOB_060	82	86	87	91	92	89	92	95
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-3	NOB_060	94	81	87	62	87	86	101	105
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-3	NOB_060	98
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-3	NOB_060	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-3	NOB_060	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Client Sample ID: NOB_060

Date Collected: 06/05/19 09:45
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-3

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			251 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 06:36	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-3
Project/Site: DWGTF_Londonderry
SDG: 19 Justin Circle - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-3
SDG: 19 Justin Circle - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-3	NOB_060	Water	06/05/19 09:45	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 6/14/19 915	Company EnDSPL

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 6.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-3
SDG Number: 19 Justin Circle - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, July 01, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060104

Lab ID: 19060104
Date Received: 6/6/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060104
Date: 7/1/2019

Lab ID: 19060104

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060104-001	EPA 524.2	NOB_058	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 19 Justin Circle Londonderry, NH

Analytical Results

Lab ID: 19060104
Date: 7/1/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-003	NOB_060	6/5/2019 9:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-003	NOB_060	6/5/2019 9:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/12/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/12/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/12/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/12/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

RP190612187

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

12 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119060499.01	Londonderry WQ Eval, Londonderry, NH, #95160.00:	**NOB_060, 19 Justin Circle**	Drinking Water	05-Jun-19 09:45	05-Jun-19 13:07
119060499.02	Londonderry WQ Eval, Londonderry, NH, #95160.00:	**NOB_061, 18 Otterson Road**	Drinking Water	05-Jun-19 11:10	05-Jun-19 13:07

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 12-Jun-19 16:59

REPORT OF ANALYSIS

sampled Date: 05-Jun-2019 09:45

119060499.01

Londonderry WQ Eval,
Londonderry, NH, #95160.00
NOB_060, 19 Justin Circle

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.4	1	mg/L	06/05/2019 15:15	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/05/2019 16:10	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/06/2019 02:51	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	06/10/2019 16:01	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/10/2019 16:01	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/10/2019 16:01	EPA 200.8	RT
Lead	0.010	0.001	mg/L	06/10/2019 16:01	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/10/2019 16:01	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/10/2019 16:01	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/10/2019 16:01	EPA 200.8	RT

6/5/19 1307 3.7

AQUARIAN ANALYTICAL

L1906 - 4991

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

(1-2)

A Division of Nelson Analytical, LLC

RP190612187

Date Rec'd: Time Rec'd: Temp Rec'd:
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: LONDONDERRY WQ EVAL
Town/Site: LONDONDERRY, NH
Sampler: DHB
Company: NOBIS GROUP
Bid Reference:

Project Manager: MARK HENDERSON
Report To: " "
Invoice To: ACCOUNTS PAYABLE
Phone: 603-224-4182
E-mail: MHENDERSON@NOBIS-GROUP.COM

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: EPA 8260B/8260C Select Parameter only:	VOCs: EPA 524.2 Drinking Water Select Parameter only:	1,4-dioxane / EDB 8260B SIM low level	SVOCs: EPA 8270C/8270D Full list / PAH only	PCB Aroclors EPA 8082A / 608	Pesticides EPA 8081B / 608	Herbicides EPA 8151A	Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 8015B Gasoline Range Organics	MADEP EPH	MADEP VPH	Petroleum Fingerprint Analysis	Metals: RCRA8 Metals (circle) Total / Dissolved	Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Total / Dissolved	Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1664A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	TCLP (please also check off the required analyses)	Aquarian ID
NOB_060 19 JUSTIN DR	6-5-19/945	DW	1														X				X								1
NOB_061 18 OTTERSON RD	6-5-19/1110	DW	1														X				X								2

Relinquished by:	Date/Time:	Received by:
[signature]	6-5-19/1307	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 3.7 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes X No
EDD required? ____Yes X No
MCP Compliance required? ____Yes X No
Is this NH "Odd Fund" related? ____Yes X No
Does a price quote apply? X Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, July 01, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060104

Lab ID: 19060104
Date Received: 6/6/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060104
Date: 7/1/2019

Lab ID: 19060104

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060104-001	EPA 524.2	NOB_058	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060104
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 18 Otterson Rd Londonderry, NH

Analytical Results

Lab ID: 19060104
Date: 7/1/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-004	NOB_061	6/5/2019 11:10:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060104-004	NOB_061	6/5/2019 11:10:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/12/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/12/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/12/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/12/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/12/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-4
Laboratory SDG: 18 Otterson Rd - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:05:30 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-4
Project/Site: DWGTF_Londonderry
SDG: 18 Otterson Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-4

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-4

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_061 (320-51329-4)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_061 (320-51329-4).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_061

Lab Sample ID: 320-51329-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.2	B	1.9	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.3		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.0		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.2		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	10		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.1		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.8	I	1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_061

Date Collected: 06/05/19 11:10
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-4

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.2**	**B**	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluoropentanoic acid (PFPeA)	**3.3**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorohexanoic acid (PFHxA)	**5.0**		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluoroheptanoic acid (PFHpA)	**2.2**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorooctanoic acid (PFOA)	**10**		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorobutanesulfonic acid (PFBS)	**6.1**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorohexanesulfonic acid (PFHxS)	**2.5**	**B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorooctanesulfonic acid (PFOS)	**2.8**	**I**	1.9	0.52	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 06:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 06:44	1
6:2 FTS	ND		9.6	1.9	ng/L		06/17/19 06:39	06/18/19 06:44	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 06:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		06/17/19 06:39	06/18/19 06:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C5 PFPeA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C2 PFHxA	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C5 PFNA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C2 PFDoA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C2 PFTeDA	*81*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C3 PFBS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C2 PFHxDA	*56*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
18O2 PFHxS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
13C4 PFOS	*81*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
M2-6:2 FTS	*100*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*
M2-8:2 FTS	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:44*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-4	NOB_061	72	86	85	93	91	92	97	93
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-4	NOB_061	89	81	86	56	82	81	93	100
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-4	NOB_061	91
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-4	NOB_061	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-4	NOB_061	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_061

Date Collected: 06/05/19 11:10
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-4

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			259.2 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 06:44	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-4
Project/Site: DWGTF_Londonderry
SDG: 18 Otterson Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4
SDG: 18 Otterson Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-4	NOB_061	Water	06/05/19 11:10	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

Page 17 of 18

6/27/2019

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-4
SDG Number: 18 Otterson Rd - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190612187

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

12 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119060499.01	Londonderry WQ Eval, Londonderry, NH, #95160.00:	**NOB_060, 19 Justin Circle**	Drinking Water	05-Jun-19 09:45	05-Jun-19 13:07
119060499.02	Londonderry WQ Eval, Londonderry, NH, #95160.00:	**NOB_061, 18 Otterson Road**	Drinking Water	05-Jun-19 11:10	05-Jun-19 13:07

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190612187

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 12-Jun-19 16:59

REPORT OF ANALYSIS

119060499.02

Londonderry WQ Eval,
Londonderry, NH, #95160.00
NOB_061, 18 Otterson Road

sampled Date: 05-Jun-2019 11:10

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.8	1	mg/L	06/05/2019 15:15	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/05/2019 16:10	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.002	0.001	mg/L	06/06/2019 02:51	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	06/10/2019 16:01	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/10/2019 16:01	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/12/2019 14:58	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/06/2019 02:51	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/10/2019 16:01	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/10/2019 16:01	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/10/2019 16:01	EPA 200.8	RT

6/5/19 1307 3.7

AQUARIAN ANALYTICAL

L1906 - 4991

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

(1-2)

A Division of Nelson Analytical, LLC

RP190612187

Date Rec'd: Time Rec'd: Temp Rec'd:
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: LONDONDERRY WQ EVAL
Town/Site: LONDONDERRY, NH
Sampler: DHB
Company: NOBIS GROUP
Bid Reference:

Project Manager: MARK HENDERSON
Report To: " "
Invoice To: ACCOUNTS PAYABLE
Phone: 603-224-4182
E-mail: MHENDERSON@NOBIS-GROUP.COM

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: EPA 8260B/8260C Select Parameter only:	VOCs: EPA 524.2 Drinking Water Select Parameter only:	1,4-dioxane / EDB 8260B SIM low level	SVOCs: EPA 8270C/8270D Full list / PAH only	PCB Aroclors EPA 8082A / 608	Pesticides EPA 8081B / 608	Herbicides EPA 8151A	Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 8015B Gasoline Range Organics	MADEP EPH	MADEP VPH	Petroleum Fingerprint Analysis	Metals: RCRA8 Metals (circle) Total / Dissolved	Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Total / Dissolved	Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1664A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	TCLP (please also check off the required analyses)	Aquarian ID
NOB_060 19 JUSTIN DR	6-5-19/945	DW	1														X				X								1
NOB_061 18 OTTERSON RD	6-5-19/1110	DW	1														X				X								2

Relinquished by:	Date/Time:	Received by:
[signature]	6-5-19/1307	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 3.7 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes X No
EDD required? ____Yes X No
MCP Compliance required? ____Yes X No
Is this NH "Odd Fund" related? ____Yes X No
Does a price quote apply? X Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-5
Laboratory SDG: 5 Allison Ln - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:03:54 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-5

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-5

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_062 (320-51329-5), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_062 (320-51329-5).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Client Sample ID: NOB_062

Lab Sample ID: 320-51329-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.1	J B	1.9	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.66	J	1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Client Sample ID: NOB_062

Date Collected: 06/11/19 09:30
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-5

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.1**	**J B**	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorooctanoic acid (PFOA)	**1.1**	**J**	1.9	0.82	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorobutanesulfonic acid (PFBS)	**0.70**	**J**	1.9	0.19	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**	**J B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorooctanesulfonic acid (PFOS)	**0.66**	**J**	1.9	0.52	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 06:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 06:52	1
6:2 FTS	ND		9.6	1.9	ng/L		06/17/19 06:39	06/18/19 06:52	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 06:52	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/17/19 06:39	06/18/19 06:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C5 PFPeA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C2 PFDoA	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C2 PFTeDA	*74*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C3 PFBS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C2 PFHxDA	*47*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
18O2 PFHxS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
13C4 PFOS	*78*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 06:52*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-5	NOB_062	80	88	88	93	91	90	97	90
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-5	NOB_062	87	74	86	47 *	82	78	97	105
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-5	NOB_062	95
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-5	NOB_062	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-5	NOB_062	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Client Sample ID: NOB_062

Date Collected: 06/11/19 09:30
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-5

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			260.5 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 06:52	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-5
Project/Site: DWGTF_Londonderry
SDG: 5 Allison Ln - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-5
SDG: 5 Allison Ln - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-5	NOB_062	Water	06/11/19 09:30	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

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6/27/2019

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-5
SDG Number: 5 Allison Ln - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 09:30

119061344.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_062, 5 Allison Lane

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/12/2019 15:05	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/12/2019 15:55	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.007	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 5 Allison Ln Londonderry NH

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-001	NOB_062	6/11/2019 9:30:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/20/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/20/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/20/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/20/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/20/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	0.58 ug/L	13		6/20/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-001	NOB_062	6/11/2019 9:30:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/20/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/20/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/20/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/20/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-6
Laboratory SDG: 29 Beacon St - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:07:25 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-6

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-6

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_063 (320-51329-6), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_063 (320-51329-6).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Client Sample ID: NOB_063

Lab Sample ID: 320-51329-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.7	B	1.9	0.32	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.7		1.9	0.45	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.4		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.0		1.9	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	7.9		1.9	0.79	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	7.7		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.6	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		1.9	0.50	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Client Sample ID: NOB_063

Date Collected: 06/11/19 10:15
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-6

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.7**	**B**	1.9	0.32	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluoropentanoic acid (PFPeA)	**2.7**		1.9	0.45	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorohexanoic acid (PFHxA)	**3.4**		1.9	0.54	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluoroheptanoic acid (PFHpA)	**2.0**		1.9	0.23	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorooctanoic acid (PFOA)	**7.9**		1.9	0.79	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorobutanesulfonic acid (PFBS)	**7.7**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorohexanesulfonic acid (PFHxS)	**1.6**	**J B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorooctanesulfonic acid (PFOS)	**2.5**		1.9	0.50	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 07:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 07:00	1
6:2 FTS	ND		9.3	1.9	ng/L		06/17/19 06:39	06/18/19 07:00	1
8:2 FTS	ND		1.9	0.35	ng/L		06/17/19 06:39	06/18/19 07:00	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 07:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C5 PFPeA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C2 PFHxA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C4 PFOA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C5 PFNA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C2 PFUnA	*99*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C2 PFTeDA	*78*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C3 PFBS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C2 PFHxDA	*48*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
18O2 PFHxS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
13C4 PFOS	*81*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
d3-NMeFOSAA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
M2-6:2 FTS	*101*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*
M2-8:2 FTS	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:00*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-6	NOB_063	71	89	91	95	92	92	94	99
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-6	NOB_063	91	78	84	48 *	86	81	94	101
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-6	NOB_063	94
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-6	NOB_063	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-6	NOB_063	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Client Sample ID: NOB_063

Date Collected: 06/11/19 10:15
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-6

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			270 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 07:00	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-6
Project/Site: DWGTF_Londonderry
SDG: 29 Beacon St - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-6
SDG: 29 Beacon St - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-6	NOB_063	Water	06/11/19 10:15	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

Page 17 of 18

6/27/2019

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-6
SDG Number: 29 Beacon St - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 10:15

119061344.02

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_063, 29 Beacon Street

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/12/2019 15:05	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	0.08	0.01	mg/L	06/12/2019 15:55	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.005	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	0.011	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

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Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 29 Beacon St Londonderry NH

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-002	NOB_063	6/11/2019 10:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/20/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/20/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/20/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/20/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/20/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/20/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-002	NOB_063	6/11/2019 10:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/20/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/20/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/20/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/20/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-7
Laboratory SDG: 68 Alexander Rd - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:09:16 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-7

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-7

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_064 (320-51329-7).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Client Sample ID: NOB_064

Lab Sample ID: 320-51329-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.3	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.7		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.6		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	37		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.0		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.1	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Client Sample ID: NOB_064

Date Collected: 06/11/19 10:55
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-7

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.3**	**B**	1.9	0.33	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluoropentanoic acid (PFPeA)	**2.4**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorohexanoic acid (PFHxA)	**4.7**		1.9	0.55	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluoroheptanoic acid (PFHpA)	**6.6**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorooctanoic acid (PFOA)	**37**		1.9	0.81	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorobutanesulfonic acid (PFBS)	**4.0**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorohexanesulfonic acid (PFHxS)	**1.1**	**J B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorooctanesulfonic acid (PFOS)	**3.3**		1.9	0.51	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 07:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:24	1
6:2 FTS	ND		9.5	1.9	ng/L		06/17/19 06:39	06/18/19 07:24	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 07:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		06/17/19 06:39	06/18/19 07:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C5 PFPeA	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C2 PFHxA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C4 PFHpA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C5 PFNA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C2 PFDA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C2 PFUnA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C2 PFDoA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C2 PFTeDA	*72*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C3 PFBS	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
18O2 PFHxS	*83*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
13C4 PFOS	*78*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
M2-6:2 FTS	*99*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*
M2-8:2 FTS	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:24*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-7	NOB_064	70	85	82	88	90	89	93	95
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-7	NOB_064	86	72	85	51	83	78	97	99
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-7	NOB_064	91
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-7	NOB_064	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-7	NOB_064	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Client Sample ID: NOB_064

Date Collected: 06/11/19 10:55
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-7

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			263.4 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 07:24	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51329-7
Project/Site: DWGTF_Londonderry
SDG: 68 Alexander Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-7
SDG: 68 Alexander Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-7	NOB_064	Water	06/11/19 10:55	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

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6/27/2019

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-7
SDG Number: 68 Alexander Rd - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 10:55

119061344.03

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_064, 68 Alexander Road

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.2	1	mg/L	06/12/2019 15:05	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/12/2019 15:55	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.040	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	0.012	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	0.002	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 68 Alexander Rd Londonderry NH

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-003	NOB_064	6/11/2019 10:55:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/20/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/20/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/20/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/20/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/20/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/20/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-003	NOB_064	6/11/2019 10:55:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/20/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/20/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/20/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/20/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/20/2019	0.5	LauraB

317 Elm Street
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51558-1
Laboratory SDG: 8 Sara Beth Ln - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
7/31/2019 6:01:37 PM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51558-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51558-1

Receipt
The samples were received on 6/21/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4º C.

Receipt Exceptions
This sample was logged for the full list method but cancelled and analyzed for the short list method. The client was contacted and confirmed it should be analyzed and reported for the full list of 20 analytes. This was changed 7/22/19.

NOB_072 (320-51558-1)

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples are below the method recommended limit: (LCS 320-309660/2-A), (LCSD 320-309660/3-A) and (MB 320-309660/1-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. The samples were reanalyzed with concurring results; the original set of data is reported

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-309660.

Method Code: 3535 PFC

Method(s) 3535: The following sample was prepared outside of preparation holding time due to being on hold past holding time: NOB_072 (320-51558-1).

Method Code: 3535 PFC
preparation batch 320-309660

Method(s) 3535: The following sample contains Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_072 (320-51558-1).

Method Code: 3535 PFC
preparation batch 320-309660

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Client Sample ID: NOB_072

Lab Sample ID: 320-51558-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.2	J H	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.2	J H	1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.67	J H	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.6	H	1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.87	J H	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.87	J H B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	J H	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Client Sample ID: NOB_072

Date Collected: 06/17/19 10:20
Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-1

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.2**	**J H**	1.9	0.33	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoropentanoic acid (PFPeA)	ND	H	1.9	0.46	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorohexanoic acid (PFHxA)	**1.2**	**J H**	1.9	0.55	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoroheptanoic acid (PFHpA)	**0.67**	**J H**	1.9	0.24	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorooctanoic acid (PFOA)	**3.6**	**H**	1.9	0.81	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorononanoic acid (PFNA)	ND	H	1.9	0.26	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorodecanoic acid (PFDA)	ND	H	1.9	0.29	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoroundecanoic acid (PFUnA)	ND	H	1.9	1.0	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorododecanoic acid (PFDoA)	ND	H	1.9	0.52	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorotridecanoic acid (PFTriA)	ND	H	1.9	1.2	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorotetradecanoic acid (PFTeA)	ND	H	1.9	0.27	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorobutanesulfonic acid (PFBS)	**0.87**	**J H**	1.9	0.19	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorohexanesulfonic acid (PFHxS)	**0.87**	**J H B**	1.9	0.16	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND	H	1.9	0.18	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**	**J H**	1.9	0.51	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorodecanesulfonic acid (PFDS)	ND	H	1.9	0.30	ng/L		07/24/19 07:21	07/25/19 07:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	H	1.9	1.2	ng/L		07/24/19 07:21	07/25/19 07:59	1
6:2 FTS	ND	H	9.5	1.9	ng/L		07/24/19 07:21	07/25/19 07:59	1
8:2 FTS	ND	H	1.9	0.36	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND	H	1.9	0.84	ng/L		07/24/19 07:21	07/25/19 07:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C5 PFPeA	*98*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C2 PFHxA	*93*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C4 PFHpA	*98*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C4 PFOA	*94*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C5 PFNA	*93*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C2 PFDA	*90*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C2 PFUnA	*89*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C2 PFDoA	*92*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C2 PFTeDA	*80*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C3 PFBS	*95*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
18O2 PFHxS	*95*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
13C4 PFOS	*91*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
d3-NMeFOSAA	*86*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*
M2-8:2 FTS	*94*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:59*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51558-1	NOB_072	79	98	93	98	94	93	90	89
LCS 320-309660/2-A	Lab Control Sample	92	95	92	95	95	91	97	93
LCSD 320-309660/3-A	Lab Control Sample Dup	95	100	96	98	95	94	96	92
MB 320-309660/1-A	Method Blank	90	93	93	95	93	88	98	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51558-1	NOB_072	92	80	95	51	95	91	86	104
LCS 320-309660/2-A	Lab Control Sample	94	78	99	42 *	97	89	94	105
LCSD 320-309660/3-A	Lab Control Sample Dup	91	78	104	38 *	100	89	88	102
MB 320-309660/1-A	Method Blank	95	78	95	41 *	94	88	88	102

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51558-1	NOB_072	94
LCS 320-309660/2-A	Lab Control Sample	97
LCSD 320-309660/3-A	Lab Control Sample Dup	107
MB 320-309660/1-A	Method Blank	105

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-309660/1-A
Matrix: Water
Analysis Batch: 310000

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309660

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorohexanesulfonic acid (PFHxS)	0.284	J	2.0	0.17	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		07/24/19 07:21	07/25/19 07:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		07/24/19 07:21	07/25/19 07:35	1
6:2 FTS	ND		10	2.0	ng/L		07/24/19 07:21	07/25/19 07:35	1
8:2 FTS	ND		2.0	0.38	ng/L		07/24/19 07:21	07/25/19 07:35	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		07/24/19 07:21	07/25/19 07:35	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C5 PFPeA	*93*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C2 PFHxA	*93*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C4 PFHpA	*95*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C4 PFOA	*93*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C5 PFNA	*88*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C2 PFDA	*98*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C2 PFUnA	*87*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C2 PFDoA	*95*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C2 PFTeDA	*78*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C3 PFBS	*95*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C2 PFHxDA	*41*	*	*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
18O2 PFHxS	*94*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
13C4 PFOS	*88*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
d3-NMeFOSAA	*88*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
M2-6:2 FTS	*102*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*
M2-8:2 FTS	*105*		*50 - 150*	*07/24/19 07:21*	*07/25/19 07:35*	*1*

Lab Sample ID: LCS 320-309660/2-A
Matrix: Water
Analysis Batch: 310000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309660

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.0		ng/L		105	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-309660/2-A
Matrix: Water
Analysis Batch: 310000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309660

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.6		ng/L		94	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.1		ng/L		103	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.8		ng/L		95	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.6		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	37.9		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	35.5		ng/L		89	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	38.8		ng/L		97	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.4		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.9		ng/L		97	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.6		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.8		ng/L		93	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.8		ng/L		110	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	36.5		ng/L		91	67 - 127
6:2 FTS	37.9	34.5		ng/L		91	66 - 126
8:2 FTS	38.3	38.6		ng/L		101	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.5		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*92*		*50 - 150*
13C5 PFPeA	*95*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*95*		*50 - 150*
13C5 PFNA	*91*		*50 - 150*
13C2 PFDA	*97*		*50 - 150*
13C2 PFUnA	*93*		*50 - 150*
13C2 PFDoA	*94*		*50 - 150*
13C2 PFTeDA	*78*		*50 - 150*
13C3 PFBS	*99*		*50 - 150*
13C2 PFHxDA	*42*	*	*50 - 150*
18O2 PFHxS	*97*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*94*		*50 - 150*
M2-6:2 FTS	*105*		*50 - 150*
M2-8:2 FTS	*97*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-309660/3-A
Matrix: Water
Analysis Batch: 310000

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309660

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.6		ng/L		104	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.9		ng/L		97	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)			40.0	39.0		ng/L		97	66 - 126	5	30
Perfluoroheptanoic acid (PFHpA)			40.0	41.1		ng/L		103	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.2		ng/L		96	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	41.5		ng/L		104	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	38.7		ng/L		97	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.5		ng/L		89	60 - 120	0	30
Perfluorododecanoic acid (PFDoA)			40.0	40.6		ng/L		101	71 - 131	4	30
Perfluorotridecanoic acid (PFTriA)			40.0	37.6		ng/L		94	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	37.7		ng/L		94	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	34.1		ng/L		97	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.8		ng/L		93	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.8		ng/L		107	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.3		ng/L		98	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	36.6		ng/L		95	68 - 128	10	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.3		ng/L		98	67 - 127	7	30
6:2 FTS			37.9	35.3		ng/L		93	66 - 126	2	30
8:2 FTS			38.3	38.5		ng/L		100	67 - 127	0	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	39.9		ng/L		100	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*95*		*50 - 150*
13C5 PFPeA	*100*		*50 - 150*
13C2 PFHxA	*96*		*50 - 150*
13C4 PFHpA	*98*		*50 - 150*
13C4 PFOA	*95*		*50 - 150*
13C5 PFNA	*94*		*50 - 150*
13C2 PFDA	*96*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*91*		*50 - 150*
13C2 PFTeDA	*78*		*50 - 150*
13C3 PFBS	*104*		*50 - 150*
13C2 PFHxDA	*38*	*	*50 - 150*
18O2 PFHxS	*100*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*88*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

LCMS

Prep Batch: 309660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51558-1	NOB_072	Total/NA	Water	3535	
MB 320-309660/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-309660/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-309660/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 310000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51558-1	NOB_072	Total/NA	Water	EPA 537(Mod)	309660
MB 320-309660/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	309660
LCS 320-309660/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	309660
LCSD 320-309660/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	309660

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Client Sample ID: NOB_072

Date Collected: 06/17/19 10:20
Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-1

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			263.9 mL	10.00 mL	309660	07/24/19 07:21	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			310000	07/25/19 07:59	VPM	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51558-1
Project/Site: DWGTF_Londonderry
SDG: 8 Sara Beth Ln - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-1
SDG: 8 Sara Beth Ln - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51558-1	NOB_072	Water	06/17/19 10:20	06/21/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4761 6866 7137

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-072	6-17-19	1020	G	DW	N		X	2	8 Sara Beth Ln
MTBE-407.3	6-17-19	1550	G	DW	N		X	2	7 Gardner Circle
NOB-073	6-18-19	1020	G	DW	N		X	2	5 Wilson Rd.

320-51558 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 6-18-19/1515 (0.7°C)	Company: Nob's Group	Received by: NHDES Cold Storage	Date/Time: 6/18/19 15:15	Company: NHDES
Relinquished by:	Date/Time: 6/20/19 1350	Company: NHDES	Received by: Shipping Cooler	Date/Time: 6/20/19 1350	Company: —
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 6/21/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806035
Cooler Temperature(s) °C and Other Remarks: 1.4

2.6

Ver: 08/04/2016

eurofins | Environment Testing TestAmerica

Sacramento
Sample Receiving Notes

320-51558 Field Sheet

Job: _____

Tracking #: 4761 6866 7137

SO / PO / FO / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes: _____

Therm. ID: IR STEM Corr. Factor: –

Ice ✓ Wet ✓ Gel ____ Other ____

Cooler Custody Seal: 806035

Sample Custody Seal: –

Cooler ID: –

Temp Observed: 1.4°C Corrected: 1.4°C

From: Temp Blank ☐ Sample ☑

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: MAN Date: 6/21/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
806035

Custody Seal
DATE 6/19
SIGN TURE

ORIGIN ID:PHDA (603) 271-8483
SHARON LEWANDOWSKI
NHDES MTBE REMEDIATION BUREAU
29 HAZEN DR

CONCORD, NH 033016503
UNITED STATES US

SHIP DATE: 28DEC18
ACTWGT: 10.00 LB MAN
CAD: 0562071/CAFE3211

TO SAMPLE RECEIVING
TESTAMERICA WEST SACRAMENTO
880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605
(916) 373-5600
REF: S480-123271

RMA:

551C1/FIFE/104C

FedEx Express

J181118060501

TRK# 0221 4761 6866 7137

RETURNS MON-SAT
PRIORITY OVERNIGHT

6/19

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
806035

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51558-1
SDG Number: 8 Sara Beth Ln - Londonderry, NH

Login Number: 51558
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806035
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627083

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061941.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_072**	Drinking Water	17-Jun-19 10:20	17-Jun-19 16:30
119061941.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**MTBE_4073**	Drinking Water	17-Jun-19 15:50	17-Jun-19 16:30

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190627083

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 16:20

REPORT OF ANALYSIS

119061941.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00

NOB_072

sampled Date: 17-Jun-2019 10:20

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/18/2019 12:00	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/18/2019 12:25	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	**0.018**	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Barium	0.074	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Lead	**0.200**	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/27/2019 13:01	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/27/2019 13:01	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT

RP190627083

te Rec'd: 6/17/19 Time Rec'd: 1630 Temp Rec'd: 2.6
c'd by: Location:
oler: Y NA Ice:
lorine: Pos Neg
ttle: TC__ MIN 40ML__ HCL__ LC__ OTHER____

1906 - 1941 (1-2)

AQUARIAN ANALYTICAL LAB

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 5087 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-072	6-17-19/1020	DW	1														X				X								1
MTBE-4073	6-17-19/1550	DW	1														X				X								2

Relinquished by:	Date/Time:	Received by:
[signature]	6/17/19 1630	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 2.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Wednesday, July 03, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060323

Lab ID: 19060323
Date Received: 6/20/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060323
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060323
Date: 7/3/2019

Lab ID: 19060323

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060323-001	EPA 524.2	NOB_072	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060323
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 8 Sara Beth Ln Londonderry NH

Analytical Results

Lab ID: 19060323
Date: 7/3/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060323-001	NOB_072	6/17/2019 10:20:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/26/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/26/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/26/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/26/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/26/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/26/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060323-001	NOB_072	6/17/2019 10:20:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/26/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/26/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/26/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/26/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51558-3
Laboratory SDG: 5 Wilson Rd - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
7/16/2019 11:48:45 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51558-3

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51558-3

Receipt
The samples were received on 6/21/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCSD 320-304060/3-A) and (MB 320-304060/1-A). The samples were re-analyzed with concurring results. 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(s). All detection limits are below the lower calibration.

Method(s) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte.
NOB_073 (320-51558-3) and (LCSD 320-304060/3-A)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-304060.

320-304060
Method: 3535 PFC-W

Method(s) 3535: The following sample was preserved in Trizma, therefore, the QC's (MB, LCS, LCSD) contained Trizma: NOB_073 (320-51558-3).

320-304060
Method: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Client Sample ID: NOB_073

Lab Sample ID: 320-51558-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.75	J	1.8	0.32	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.51	J	1.8	0.44	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.2	J I	1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.7	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	15		1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.42	J	1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.68	J I B	1.8	0.15	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.49	J I	1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Client Sample ID: NOB_073

Date Collected: 06/18/19 10:20
Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-3

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.75**	**J**	1.8	0.32	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluoropentanoic acid (PFPeA)	**0.51**	**J**	1.8	0.44	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorohexanoic acid (PFHxA)	**1.2**	**J I**	1.8	0.52	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluoroheptanoic acid (PFHpA)	**1.7**	**J**	1.8	0.23	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorooctanoic acid (PFOA)	**15**		1.8	0.77	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorobutanesulfonic acid (PFBS)	**0.42**	**J**	1.8	0.18	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorohexanesulfonic acid (PFHxS)	**0.68**	**J I B**	1.8	0.15	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorooctanesulfonic acid (PFOS)	**0.49**	**J I**	1.8	0.49	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		06/27/19 05:00	06/30/19 07:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		06/27/19 05:00	06/30/19 07:32	1
6:2 FTS	ND		9.0	1.8	ng/L		06/27/19 05:00	06/30/19 07:32	1
8:2 FTS	ND		1.8	0.34	ng/L		06/27/19 05:00	06/30/19 07:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.80	ng/L		06/27/19 05:00	06/30/19 07:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*66*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C5 PFPeA	*73*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C2 PFHxA	*70*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C4 PFHpA	*73*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C4 PFOA	*87*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C5 PFNA	*81*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C2 PFDA	*86*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C2 PFUnA	*74*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C2 PFDoA	*72*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C2 PFTeDA	*72*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C3 PFBS	*75*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
18O2 PFHxS	*74*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
13C4 PFOS	*73*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
d3-NMeFOSAA	*80*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
M2-6:2 FTS	*87*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*
M2-8:2 FTS	*87*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:32*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51558-3	NOB_073	66	73	70	73	87	81	86	74
LCS 320-304060/2-A	Lab Control Sample	82	87	84	88	90	92	91	87
LCSD 320-304060/3-A	Lab Control Sample Dup	86	88	90	92	95	95	92	92
MB 320-304060/1-A	Method Blank	84	91	88	95	93	95	98	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51558-3	NOB_073	72	72	75	51	74	73	80	87
LCS 320-304060/2-A	Lab Control Sample	80	80	89	51	92	89	94	93
LCSD 320-304060/3-A	Lab Control Sample Dup	83	79	89	42 *	91	91	95	106
MB 320-304060/1-A	Method Blank	85	77	89	42 *	89	89	97	99

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51558-3	NOB_073	87
LCS 320-304060/2-A	Lab Control Sample	94
LCSD 320-304060/3-A	Lab Control Sample Dup	96
MB 320-304060/1-A	Method Blank	99

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-304060/1-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 304060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorotetradecanoic acid (PFTeA)	0.345	J	2.0	0.29	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorohexanesulfonic acid (PFHxS)	0.324	J	2.0	0.17	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/27/19 05:00	06/30/19 05:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/27/19 05:00	06/30/19 05:08	1
6:2 FTS	ND		10	2.0	ng/L		06/27/19 05:00	06/30/19 05:08	1
8:2 FTS	ND		2.0	0.38	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/27/19 05:00	06/30/19 05:08	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C4 PFOA	*93*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C5 PFNA	*95*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFDoA	*85*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFTeDA	*77*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFHxDA	*42*	*	*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
18O2 PFHxS	*89*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C4 PFOS	*89*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
M2-6:2 FTS	*99*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
M2-8:2 FTS	*99*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*

Lab Sample ID: LCS 320-304060/2-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 304060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-304060/2-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 304060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.5		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	38.2		ng/L		96	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.1		ng/L		100	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.8		ng/L		94	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.4		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.1		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.0		ng/L		92	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	42.5		ng/L		106	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	40.6		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	40.4		ng/L		101	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	35.2		ng/L		100	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.0		ng/L		91	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.6		ng/L		99	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.0		ng/L		97	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.2		ng/L		91	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.2		ng/L		101	67 - 127
6:2 FTS	37.9	39.5		ng/L		104	66 - 126
8:2 FTS	38.3	39.4		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.8		ng/L		102	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*82*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*84*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*90*		*50 - 150*
13C5 PFNA	*92*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*80*		*50 - 150*
13C2 PFTeDA	*80*		*50 - 150*
13C3 PFBS	*89*		*50 - 150*
13C2 PFHxDA	*51*		*50 - 150*
18O2 PFHxS	*92*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*94*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*94*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-304060/3-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 304060

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.3		ng/L		101	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	38.7		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	38.0		ng/L		95	66 - 126	0	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.8		ng/L		99	66 - 126	1	30
Perfluorooctanoic acid (PFOA)			40.0	37.2		ng/L		93	64 - 124	2	30
Perfluorononanoic acid (PFNA)			40.0	39.4		ng/L		99	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	36.9		ng/L		92	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	34.1		ng/L		85	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.2		ng/L		96	71 - 131	11	30
Perfluorotridecanoic acid (PFTriA)			40.0	39.7		ng/L		99	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	41.0		ng/L		102	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.0		ng/L		99	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	37.6		ng/L		99	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.4		ng/L		95	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)			38.6	34.6		ng/L		90	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	43.9		ng/L		110	67 - 127	9	30
6:2 FTS			37.9	35.5		ng/L		94	66 - 126	11	30
8:2 FTS			38.3	36.5		ng/L		95	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	39.3	I	ng/L		98	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*92*		*50 - 150*
13C4 PFOA	*95*		*50 - 150*
13C5 PFNA	*95*		*50 - 150*
13C2 PFDA	*92*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*83*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*89*		*50 - 150*
13C2 PFHxDA	*42*	*	*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*106*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

LCMS

Prep Batch: 304060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51558-3	NOB_073	Total/NA	Water	3535	
MB 320-304060/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-304060/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-304060/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 304828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51558-3	NOB_073	Total/NA	Water	EPA 537(Mod)	304060
MB 320-304060/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	304060
LCS 320-304060/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	304060
LCSD 320-304060/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	304060

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Client Sample ID: NOB_073

Date Collected: 06/18/19 10:20
Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-3

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			277.1 mL	10.0 mL	304060	06/27/19 05:00	MTN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			304828	06/30/19 07:32	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51558-3
Project/Site: DWGTF_Londonderry
SDG: 5 Wilson Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-3
SDG: 5 Wilson Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51558-3	NOB_073	Water	06/18/19 10:20	06/21/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4761 6866 7137

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC - IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-072	6-17-19	1020	G	DW	N		X	2	8 Sara Beth Ln
MTBE-407.3	6-17-19	1550	G	DW	N		X	2	7 Gardner Circle
NOB-073	6-18-19	1020	G	DW	N		X	2	5 Wilson Rd.

320-51558 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 6-18-19/1515 (0.7°C)	Company: Nob's Group	Received by: NHDES Cold Storage	Date/Time: 6/18/19 15:15	Company: NHDES
Relinquished by:	Date/Time: 6/20/19 1350	Company: NHDES	Received by: Shipping Cooler	Date/Time: 6/20/19 1350	Company: —
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 6/21/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806035
Cooler Temperature(s) °C and Other Remarks: 1.4

2.6

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51558-3
SDG Number: 5 Wilson Rd - Londonderry, NH

Login Number: 51558
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806035
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Wednesday, July 03, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060323

Lab ID: 19060323
Date Received: 6/20/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060323
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060323
Date: 7/3/2019

Lab ID: 19060323

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060323-001	EPA 524.2	NOB_072	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060323
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 5 Wilson Rd Londonderry NH

Analytical Results

Lab ID: 19060323
Date: 7/3/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060323-003	NOB_073	6/17/2019 10:20:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/26/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/26/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/26/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/26/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/26/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/26/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060323-003	NOB_073	6/17/2019 10:20:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/26/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/26/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/26/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/26/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

RP190627084

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119062004.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_073**	Drinking Water	18-Jun-19 10:20	18-Jun-19 11:15

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190627084

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 16:20

REPORT OF ANALYSIS

119062004.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00

NOB_073

sampled Date: 18-Jun-2019 10:20

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/18/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/18/2019 16:35	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	06/20/2019 20:33	EPA 200.8	RT
Barium	0.129	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Chromium	0.013	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Lead	0.008	0.001	mg/L	06/20/2019 20:33	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/27/2019 13:01	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/27/2019 13:01	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Uranium	**428**	1	ug/L	06/27/2019 13:01	EPA 200.8	RT

Date Rec'd: 6/18/19 Time Rec'd: 1115 Temp Rec'd: 4.5
Rec'd by: GDW Location: FC
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (NA)
Bottle: TC__ MIN 1 40ML__ HCL__ LC__ OTHER__

RP190627084

AQUARIAN ANALYTICAL LAB

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

119062004

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information / VOCs / SVOCs / Petroleum / Metals / Wet Chemistry / Inorganics

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs EPA 8260B/8260C Select Parameter only:___	VOCs EPA 524.2 Drinking Water Select Parameter only:___	1,4-dioxane / EDB 8260B SIM low level	SVOCs EPA 8270C/8270D Full list / PAH only	PCB Aroclors EPA 8082A / 608	Pesticides EPA 8081B / 608	Herbicides EPA 8151A	Drinking Water SOCs (circle) 525.2/ 504.1 / 508 / 515.1	TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 8015B Gasoline Range Organics	MADEP EPH	MADEP VPH	Petroleum Fingerprint Analysis	RCRA8 metals (circle) Total / Dissolved	Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Total / Dissolved	Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide (Nitrate / Nitrite) Fluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1664A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	TCLP (please also check off the required analyses)	Aquarian ID
NOB_073	6-17-19/1020	DW	1														X				X								

Page 3 of 3

Relinquished by:	Date/Time:	Received by:
[signature]	6/18/19 1115	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 4.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required?____Yes____No
Is this NH "Odd Fund" related?____Yes____No
Does a price quote apply?____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51801-6
Laboratory SDG: 25 Coteville Rd - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
7/16/2019 12:03:02 PM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51801-6
Project/Site: DWGTF_Londonderry
SDG: 25 Coteville Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51801-6

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51801-6

Receipt
The samples were received on 6/27/2019 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The 13C2 PFHxDA Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: (LCS 320-305366/2-A), (LCSD 320-305366/3-A) and (MB 320-305366/1-A). These MB, LCS,LCSD and samples were re-analyzed with concurring results; however, the target analyte results did not differ from the original analysis. Therefore, results were reported from the original analysis. 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(s).

Method(s) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_074 (320-51801-6)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-305366.

Method Code: 3535 PFC

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_074 (320-51801-6).

Method Code: 3535 PFC
preparation batch 320-305366

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

Client Sample ID: NOB_074

Lab Sample ID: 320-51801-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.3	J	1.8	0.32	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.0		1.8	0.45	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		1.8	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	11		1.8	0.79	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	13		1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2	B	1.8	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3	I	1.8	0.50	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

Client Sample ID: NOB_074

Date Collected: 06/26/19 08:20
Date Received: 06/27/19 09:35

Lab Sample ID: 320-51801-6

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.3**	**J**	1.8	0.32	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluoropentanoic acid (PFPeA)	**2.0**		1.8	0.45	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorohexanoic acid (PFHxA)	**3.3**		1.8	0.54	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluoroheptanoic acid (PFHpA)	**1.6**	**J**	1.8	0.23	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorooctanoic acid (PFOA)	**11**		1.8	0.79	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.29	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.27	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorobutanesulfonic acid (PFBS)	**13**		1.8	0.18	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorohexanesulfonic acid (PFHxS)	**3.2**	**B**	1.8	0.16	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.18	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorooctanesulfonic acid (PFOS)	**2.3**	**I**	1.8	0.50	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.30	ng/L		07/03/19 05:43	07/04/19 17:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		07/03/19 05:43	07/04/19 17:33	1
6:2 FTS	ND		9.2	1.8	ng/L		07/03/19 05:43	07/04/19 17:33	1
8:2 FTS	ND		1.8	0.35	ng/L		07/03/19 05:43	07/04/19 17:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.82	ng/L		07/03/19 05:43	07/04/19 17:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C5 PFPeA	*93*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C2 PFHxA	*97*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C4 PFHpA	*101*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C4 PFOA	*97*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C5 PFNA	*96*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C2 PFDA	*97*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C2 PFUnA	*100*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C2 PFDoA	*93*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C3 PFBS	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C2 PFHxDA	*54*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
18O2 PFHxS	*98*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
13C4 PFOS	*100*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
d3-NMeFOSAA	*100*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
M2-6:2 FTS	*122*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*
M2-8:2 FTS	*116*		*50 - 150*	*07/03/19 05:43*	*07/04/19 17:33*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51801-6	NOB_074	80	93	97	101	97	96	97	100
LCS 320-305366/2-A	Lab Control Sample	85	89	91	93	91	94	93	91
LCSD 320-305366/3-A	Lab Control Sample Dup	86	90	85	93	91	95	88	94
MB 320-305366/1-A	Method Blank	86	92	88	94	98	96	97	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51801-6	NOB_074	93	87	92	54	98	100	100	122
LCS 320-305366/2-A	Lab Control Sample	88	77	89	31 *	95	89	96	100
LCSD 320-305366/3-A	Lab Control Sample Dup	90	82	84	44 *	90	91	98	103
MB 320-305366/1-A	Method Blank	87	82	90	39 *	90	92	95	110

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51801-6	NOB_074	116
LCS 320-305366/2-A	Lab Control Sample	94
LCSD 320-305366/3-A	Lab Control Sample Dup	95
MB 320-305366/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-305366/1-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 305366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorohexanesulfonic acid (PFHxS)	0.281	J	2.0	0.17	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		07/03/19 05:43	07/04/19 16:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		07/03/19 05:43	07/04/19 16:29	1
6:2 FTS	ND		10	2.0	ng/L		07/03/19 05:43	07/04/19 16:29	1
8:2 FTS	ND		2.0	0.38	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		07/03/19 05:43	07/04/19 16:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C5 PFPeA	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFHxA	*88*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C4 PFHpA	*94*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C4 PFOA	*98*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C5 PFNA	*96*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFDA	*97*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFUnA	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFDoA	*87*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C3 PFBS	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFHxDA	*39*	*	*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
18O2 PFHxS	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C4 PFOS	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
M2-6:2 FTS	*110*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*

Lab Sample ID: LCS 320-305366/2-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 305366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.8		ng/L		107	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-305366/2-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 305366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.9		ng/L		97	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.6		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	43.3		ng/L		108	64 - 124
Perfluorononanoic acid (PFNA)	40.0	44.4		ng/L		111	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.4		ng/L		98	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	41.2		ng/L		103	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	40.8		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	39.8		ng/L		99	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	38.4		ng/L		109	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.6		ng/L		98	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.7		ng/L		102	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.1		ng/L		100	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	37.8		ng/L		98	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.9		ng/L		102	67 - 127
6:2 FTS	37.9	41.1		ng/L		108	66 - 126
8:2 FTS	38.3	40.8		ng/L		106	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	41.0		ng/L		103	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*89*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*91*		*50 - 150*
13C5 PFNA	*94*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*91*		*50 - 150*
13C2 PFDoA	*88*		*50 - 150*
13C2 PFTeDA	*77*		*50 - 150*
13C3 PFBS	*89*		*50 - 150*
13C2 PFHxDA	*31*	*	*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*96*		*50 - 150*
M2-6:2 FTS	*100*		*50 - 150*
M2-8:2 FTS	*94*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-305366/3-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 305366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	42.3		ng/L		106	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	41.0		ng/L		102	66 - 126	5	30
Perfluorohexanoic acid (PFHxA)			40.0	42.9		ng/L		107	66 - 126	8	30
Perfluoroheptanoic acid (PFHpA)			40.0	41.2		ng/L		103	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	41.2		ng/L		103	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	43.5		ng/L		109	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	44.0		ng/L		110	69 - 129	3	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.5		ng/L		99	60 - 120	0	30
Perfluorododecanoic acid (PFDoA)			40.0	42.3		ng/L		106	71 - 131	3	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.3		ng/L		103	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	40.0		ng/L		100	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	40.7		ng/L		115	73 - 133	6	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.6		ng/L		98	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	41.3		ng/L		109	68 - 128	6	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.4		ng/L		95	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.5		ng/L		97	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.6		ng/L		99	67 - 127	3	30
6:2 FTS			37.9	40.0		ng/L		105	66 - 126	3	30
8:2 FTS			38.3	42.4		ng/L		111	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.5		ng/L		104	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*90*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*91*		*50 - 150*
13C5 PFNA	*95*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*94*		*50 - 150*
13C2 PFDoA	*90*		*50 - 150*
13C2 PFTeDA	*82*		*50 - 150*
13C3 PFBS	*84*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*98*		*50 - 150*
M2-6:2 FTS	*103*		*50 - 150*
M2-8:2 FTS	*95*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

LCMS

Prep Batch: 305366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51801-6	NOB_074	Total/NA	Water	3535	
MB 320-305366/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-305366/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-305366/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 305690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51801-6	NOB_074	Total/NA	Water	EPA 537(Mod)	305366
MB 320-305366/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	305366
LCS 320-305366/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	305366
LCSD 320-305366/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	305366

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

Client Sample ID: NOB_074

Date Collected: 06/26/19 08:20
Date Received: 06/27/19 09:35

Lab Sample ID: 320-51801-6

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			270.6 mL	10.00 mL	305366	07/03/19 05:43	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			305690	07/04/19 17:33	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51801-6
Project/Site: DWGTF_Londonderry
SDG: 25 Coteville Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-6
SDG: 25 Coteville Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51801-6	NOB_074	Water	06/26/19 08:20	06/27/19 09:35	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MtBE_1125	6-20-19	1155	G	DW	N		X	2	19 Tetson Drive

320-51801 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6-20-19/1555	Nobis Group	refrigerator	6-20-19/1555	Nobis Group
refrigerator	6/21/2019@9:00am	Nobis Group	Katie Lopes	6/21/2019@9:00am	Nobis Group
[signature]	6/21/2019@9:20am	Nobis Group	Kate Day	6/21/19 9:20 am	NHDES

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.: 806015
Cooler Temperature(s) °C and Other Remarks: 1.6

6/26/19 1402 Shipping Cooler 6/26/19 1402 2.3°C Received: [signature] ETA-JAC 6/27/19 935

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Stephanie Nstico	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-271-7175	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environmental Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: Stratham FD	Project #: Stratham FD			
Site: Stratham, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-9330	6/21/19	11:11	G	W	N	N	X	2	15 College Rd
MTBE-9331	6/21/19	11:33	G	W	N	N	X	2	17 Winnicutt Rd

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6/21/19 15:18	NHDES	Cold Storage 0.3°C	6/21/19 15:18	NHDES
[signature]	6/26/19 1402	NHDES	Shipping Cooler	6/26/19 1402	2.3°C
			[signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806015
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Stephanie Nistico	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No.
Client Contact: Derek Bennett	Phone: 603-271-7175	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environmental Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: Bodwell Septage	~~Bodwell Septage~~ General PWS: Bodwell Septage			
Site: Kensington, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-9332	6/21/19	13:45	G	W	N	N	X	2	146 Drinkwater Rd

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6/21/19 15:18	NHDES	Cold Storage 03	6/21/19 15:18	NHDES
[signature]	6/26/19 1402	NHDES	Shipping Cooler	6/26/19 1402	2.3°C
			[signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806015
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Anna Heard	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-271-8538	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF	Project #: DWGTF			
Site: Hinsdale, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Group 8 (22 Analytes)										Total Number of containers	Special Instructions/Note: (Address and Group No.)
			Preservation Code:															
MTBE_8613	6.24.19	10:22	G	W	N	N	X										2	63 Oxbow Rd

Possible Hazard Identification
■ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6.24.19 14:41	NHDES	NHDES Cold Storage Temp: 4.3°C	6.24.19 14:41	NHDES
[signature]	6/26/19 1402	NHDES	NHDES Shipping Cooler Temp: 2.3°C	6/26/19 1402	NHDES
			[signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 806015

Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-074	6-26-19	0820	G	DW	N		X	2	25 Coteville Rd.

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6/26/19 13:33	NUBS	[signature] NHDES Cold Storage	6/26/19 13:33 (0.6°C)	NHDES
[signature]	6/26/19 1402	NHDES	Shipping Cooler	6/26/19 1402	2.3°C
Relinquished by:	Date/Time:	Company	Received by: [signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 806015 | Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51801-6
SDG Number: 25 Coteville Rd - Londonderry, NH

Login Number: 51801
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806015
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190703014

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

03 July 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119062961.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_074**	Drinking Water	26-Jun-19 08:20	26-Jun-19 09:40

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190703014

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 03-Jul-19 12:47

REPORT OF ANALYSIS

119062961.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00

NOB_074

sampled Date: 26-Jun-2019 08:20

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.2	1	mg/L	06/26/2019 15:55	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/26/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	07/02/2019 13:52	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	07/02/2019 13:52	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	07/02/2019 13:52	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	07/02/2019 13:52	EPA 200.8	RT
Lead	0.005	0.001	mg/L	07/02/2019 13:52	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	07/02/2019 13:52	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	07/02/2019 13:52	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	07/02/2019 13:52	EPA 200.8	RT

AQUARIAN ANALYTICAL LAB

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190703014

Date Rec'd: 6/26/19 Time Rec'd: 0940 Temp Rec'd: 8.6
Rec'd by: [illegible] Location: FC
Cooler: 0 Y N Ice: 0 Y N
Chlorine: Pos Neg NA
Bottle: TC__ MIN 1 40ML__ HCL__ LC__ OTHER__

1190629 61

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: mhenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs EPA 8260B/8260C Select Parameter only:	VOCs EPA 524.2 Drinking Water Select Parameter only:	1,4-dioxane / EDB 8260B SIM low level	SVOCs EPA 8270C/8270D Full list / PAH only	PCB Aroclors EPA 8082A / 608	Pesticides EPA 8081B / 608	Herbicides EPA 8151A	Drinking Water SOCs (circle) 525.2/504.1/508/515.1	TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 8015B Gasoline Range Organics	MADEP EPH	MADEP VPH	Petroleum Fingerprint Analysis	RCRA8 metals (circle) Total / Dissolved	Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Total / Dissolved	Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1664A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	TCLP (please also check off the required analyses)	Aquarian ID
NOB-074	6-26-19/0820	DW	1														X				X							

Page 3 of 3

Relinquished by:	Date/Time:	Received by:
[signature]	6/26/19 940	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 8.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required?____Yes____No
Is this NH "Odd Fund" related?____Yes____No
Does a price quote apply?____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Wednesday, July 17, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19070003

Lab ID: 19070003
Date Received: 6/27/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19070003
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19070003
Date: 7/17/2019

Lab ID: 19070003

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19070003-001	EPA 524.2	NOB_074	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19070003
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 25 Coteville Rd Londonderry NH

Analytical Results

Lab ID: 19070003
Date: 7/17/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19070003-001	NOB_074	6/26/2019 8:20:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		7/2/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		7/2/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		7/2/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			7/2/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		7/2/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		7/2/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		7/2/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19070003-001	NOB_074	6/26/2019 8:20:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		7/2/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		7/2/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		7/2/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		7/2/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		7/2/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-1
Laboratory SDG: 21 Tokanel Dr - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:27:16 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-1

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298920.

320-298920
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Client Sample ID: MTBE_1122

Lab Sample ID: 320-50812-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.1		1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.5		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.4	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	7.0		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.35	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.30	J I	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.2		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.7	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.24	J	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.5	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Client Sample ID: MTBE_1122

Date Collected: 05/21/19 09:10
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-1

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.1**		1.9	0.33	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluoropentanoic acid (PFPeA)	**2.4**		1.9	0.47	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorohexanoic acid (PFHxA)	**2.5**		1.9	0.55	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluoroheptanoic acid (PFHpA)	**1.4**	**J**	1.9	0.24	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorooctanoic acid (PFOA)	**7.0**		1.9	0.81	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorononanoic acid (PFNA)	**0.35**	**J**	1.9	0.26	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorodecanoic acid (PFDA)	**0.30**	**J I**	1.9	0.30	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorobutanesulfonic acid (PFBS)	**6.2**		1.9	0.19	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorohexanesulfonic acid (PFHxS)	**4.7**	**B**	1.9	0.16	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.24**	**J**	1.9	0.18	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorooctanesulfonic acid (PFOS)	**7.5**	**I**	1.9	0.51	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/04/19 06:31	06/05/19 03:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/04/19 06:31	06/05/19 03:28	1
6:2 FTS	ND		9.5	1.9	ng/L		06/04/19 06:31	06/05/19 03:28	1
8:2 FTS	ND		1.9	0.36	ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/04/19 06:31	06/05/19 03:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C5 PFPeA	*97*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C4 PFHpA	*94*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C4 PFOA	*94*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C5 PFNA	*98*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C2 PFDA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C2 PFTeDA	*76*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C2 PFHxDA	*53*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
18O2 PFHxS	*86*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
13C4 PFOS	*84*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
d3-NMeFOSAA	*87*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
M2-6:2 FTS	*100*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*
M2-8:2 FTS	*94*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:28*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-1	MTBE_1122	82	97	88	94	94	98	91	90
LCS 320-298920/2-A	Lab Control Sample	86	90	89	94	93	88	94	91
LCSD 320-298920/3-A	Lab Control Sample Dup	92	101	98	96	98	99	102	93
MB 320-298920/1-A	Method Blank	90	99	98	93	91	90	94	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-1	MTBE_1122	93	76	88	53	86	84	87	100
LCS 320-298920/2-A	Lab Control Sample	89	77	85	50	86	81	91	94
LCSD 320-298920/3-A	Lab Control Sample Dup	96	82	93	51	94	87	93	104
MB 320-298920/1-A	Method Blank	96	79	91	51	88	83	91	99

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-1	MTBE_1122	94
LCS 320-298920/2-A	Lab Control Sample	89
LCSD 320-298920/3-A	Lab Control Sample Dup	96
MB 320-298920/1-A	Method Blank	92

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298920/1-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298920

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorohexanesulfonic acid (PFHxS)	0.388	J	2.0	0.17	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:31	06/05/19 03:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:31	06/05/19 03:04	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:31	06/05/19 03:04	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:31	06/05/19 03:04	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C5 PFPeA	*99*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFHxA	*98*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFUnA	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFDoA	*96*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFTeDA	*79*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C4 PFOS	*83*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
d3-NMeFOSAA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
M2-6:2 FTS	*99*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
M2-8:2 FTS	*92*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*

Lab Sample ID: LCS 320-298920/2-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298920/2-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	40.4		ng/L		101	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	38.3		ng/L		96	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	38.4		ng/L		96	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.3		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.5		ng/L		96	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	35.0		ng/L		87	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	38.9		ng/L		97	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	37.0		ng/L		92	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.1		ng/L		90	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	38.1		ng/L		108	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.7		ng/L		98	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.9		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.0		ng/L		100	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	37.3		ng/L		97	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.0		ng/L		100	67 - 127
6:2 FTS	37.9	41.6		ng/L		110	66 - 126
8:2 FTS	38.3	40.5		ng/L		106	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.0		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*90*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*93*		*50 - 150*
13C5 PFNA	*88*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*91*		*50 - 150*
13C2 PFDoA	*89*		*50 - 150*
13C2 PFTeDA	*77*		*50 - 150*
13C3 PFBS	*85*		*50 - 150*
13C2 PFHxDA	*50*		*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*81*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298920/3-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298920

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.2		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.2		ng/L		95	66 - 126	6	30
Perfluorohexanoic acid (PFHxA)			40.0	38.4		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	3	30
Perfluorooctanoic acid (PFOA)			40.0	37.6		ng/L		94	64 - 124	2	30
Perfluorononanoic acid (PFNA)			40.0	38.6		ng/L		96	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	37.5		ng/L		94	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.5		ng/L		96	60 - 120	10	30
Perfluorododecanoic acid (PFDoA)			40.0	38.1		ng/L		95	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	35.9		ng/L		90	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	68 - 128	4	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.8		ng/L		104	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.0		ng/L		91	63 - 123	8	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.7		ng/L		104	68 - 128	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.3		ng/L		98	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)			38.6	36.1		ng/L		94	68 - 128	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	41.8		ng/L		104	67 - 127	4	30
6:2 FTS			37.9	39.5		ng/L		104	66 - 126	5	30
8:2 FTS			38.3	38.8		ng/L		101	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.8		ng/L		97	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*92*		*50 - 150*
13C5 PFPeA	*101*		*50 - 150*
13C2 PFHxA	*98*		*50 - 150*
13C4 PFHpA	*96*		*50 - 150*
13C4 PFOA	*98*		*50 - 150*
13C5 PFNA	*99*		*50 - 150*
13C2 PFDA	*102*		*50 - 150*
13C2 PFUnA	*93*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*82*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*51*		*50 - 150*
18O2 PFHxS	*94*		*50 - 150*
13C4 PFOS	*87*		*50 - 150*
d3-NMeFOSAA	*93*		*50 - 150*
M2-6:2 FTS	*104*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

LCMS

Prep Batch: 298920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-1	MTBE_1122	Total/NA	Water	3535	
MB 320-298920/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298920/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298920/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-1	MTBE_1122	Total/NA	Water	EPA 537(Mod)	298920
MB 320-298920/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298920
LCS 320-298920/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298920
LCSD 320-298920/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298920

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Client Sample ID: MTBE_1122

Date Collected: 05/21/19 09:10
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-1

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			262.3 mL	10.0 mL	298920	06/04/19 06:31	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299166	06/05/19 03:28	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50812-1
Project/Site: DWGTF_Londonderry
SDG: 21 Tokanel Dr - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-1
SDG: 21 Tokanel Dr - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-1	MTBE_1122	Water	05/21/19 09:10	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

eurofins | Environment Testing TestAmerica

320-50812 Field Sheet

ramento
ıg Notes

Job:_____

Tracking # 4917 8544 6485 SO / PO / FO / 2-Day / Ground / UPS / Courier / GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:_____

Therm. ID: AK3 Corr. Factor: –

Ice ✓ Wet ✓ Gel _____ Other _____

Cooler Custody Seal: 741608

Sample Custody Seal: –

Cooler ID: –

Temp Observed: 1.6°C Corrected: 1.6°C

From: Temp Blank ☐ Sample ☑

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: MAN Date: 5/31/19

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Ref: S[redacted]
Dep:

0.00 TOTAL: 0.00

Svcs: PRIORITY OVERNIGHT Master 4917 8544 6452
TRCK: 4917 8544 6485

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID:PHDA (603) 271-8483
SHARON LEWANDOWSKI
NHDES MTBE REMEDIATION BUREAU
29 HAZEN DR

CONCORD, NH 033016503
UNITED STATES US

SHIP DATE: 29APR19
ACTWGT: 10.00 LB MAN
CAD: 0562065/CAFE3211

TO **SAMPLE RECEIVING**
TESTAMERICA WEST SACRAMENTO
880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605
(916) 373-5600
REF: S480-129630

RMA:

FedEx Express

FedEx
TRK# 0221 4917 8544 6485

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

XH BLUA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
741608

#2635495 05/30 565J1/D66C/23AD

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-1
SDG Number: 21 Tokanel Dr - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 09:10

119052561.01

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00

Drinking Water, MTBE_1122

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.005	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 21 Tokanel Dr Londonderry NH

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-002	MTBE_1122	5/21/2019 9:10:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/3/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/3/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/3/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/3/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/3/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/3/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/3/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-002	MTBE_1122	5/21/2019 9:10:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/3/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/3/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 1 ug/L			6/3/2019	1	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/3/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/3/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/3/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51801-1
Laboratory SDG: 19 Teton Drive - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
7/16/2019 11:57:58 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51801-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51801-1

Receipt
The samples were received on 6/27/2019 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) 537 (modified), EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The 13C2 PFHxDA Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: (LCS 320-305366/2-A), (LCSD 320-305366/3-A) and (MB 320-305366/1-A). These MB, LCS,LCSD and samples were re-analyzed with concurring results; however, the target analyte results did not differ from the original analysis. Therefore, results were reported from the original analysis. 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(s).

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-305366.

Method Code: 3535 PFC

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: MTBE_2800 (320-51801-1).

Method Code: 3535 PFC
preparation batch 320-305366

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Client Sample ID: MTBE_2800

Lab Sample ID: 320-51801-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.28	J B	1.8	0.16	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Client Sample ID: MTBE_2800

Date Collected: 06/20/19 11:55
Date Received: 06/27/19 09:35

Lab Sample ID: 320-51801-1

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.32	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.45	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.53	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.78	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.27	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorohexanesulfonic acid (PFHxS)	**0.28**	**J B**	1.8	0.16	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.49	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		07/03/19 05:43	07/04/19 16:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		07/03/19 05:43	07/04/19 16:53	1
6:2 FTS	ND		9.1	1.8	ng/L		07/03/19 05:43	07/04/19 16:53	1
8:2 FTS	ND		1.8	0.34	ng/L		07/03/19 05:43	07/04/19 16:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.81	ng/L		07/03/19 05:43	07/04/19 16:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C5 PFPeA	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C2 PFHxA	*85*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C4 PFHpA	*94*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C4 PFOA	*93*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C5 PFNA	*98*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C2 PFDA	*96*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C2 PFUnA	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C2 PFDoA	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C2 PFTeDA	*85*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C3 PFBS	*84*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C2 PFHxDA	*56*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
18O2 PFHxS	*93*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
13C4 PFOS	*86*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
d3-NMeFOSAA	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
M2-6:2 FTS	*108*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*
M2-8:2 FTS	*91*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:53*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51801-1	MTBE_2800	82	90	85	94	93	98	96	92
LCS 320-305366/2-A	Lab Control Sample	85	89	91	93	91	94	93	91
LCSD 320-305366/3-A	Lab Control Sample Dup	86	90	85	93	91	95	88	94
MB 320-305366/1-A	Method Blank	86	92	88	94	98	96	97	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51801-1	MTBE_2800	90	85	84	56	93	86	92	108
LCS 320-305366/2-A	Lab Control Sample	88	77	89	31 *	95	89	96	100
LCSD 320-305366/3-A	Lab Control Sample Dup	90	82	84	44 *	90	91	98	103
MB 320-305366/1-A	Method Blank	87	82	90	39 *	90	92	95	110

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51801-1	MTBE_2800	91
LCS 320-305366/2-A	Lab Control Sample	94
LCSD 320-305366/3-A	Lab Control Sample Dup	95
MB 320-305366/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-305366/1-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 305366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorohexanesulfonic acid (PFHxS)	0.281	J	2.0	0.17	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		07/03/19 05:43	07/04/19 16:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		07/03/19 05:43	07/04/19 16:29	1
6:2 FTS	ND		10	2.0	ng/L		07/03/19 05:43	07/04/19 16:29	1
8:2 FTS	ND		2.0	0.38	ng/L		07/03/19 05:43	07/04/19 16:29	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		07/03/19 05:43	07/04/19 16:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C5 PFPeA	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFHxA	*88*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C4 PFHpA	*94*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C4 PFOA	*98*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C5 PFNA	*96*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFDA	*97*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFUnA	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFDoA	*87*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C3 PFBS	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C2 PFHxDA	*39*	*	*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
18O2 PFHxS	*90*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
13C4 PFOS	*92*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
M2-6:2 FTS	*110*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*07/03/19 05:43*	*07/04/19 16:29*	*1*

Lab Sample ID: LCS 320-305366/2-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 305366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.8		ng/L		107	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-305366/2-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 305366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.9		ng/L		97	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.6		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	43.3		ng/L		108	64 - 124
Perfluorononanoic acid (PFNA)	40.0	44.4		ng/L		111	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.4		ng/L		98	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	41.2		ng/L		103	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	40.8		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	39.8		ng/L		99	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	38.4		ng/L		109	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.6		ng/L		98	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.7		ng/L		102	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.1		ng/L		100	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	37.8		ng/L		98	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.9		ng/L		102	67 - 127
6:2 FTS	37.9	41.1		ng/L		108	66 - 126
8:2 FTS	38.3	40.8		ng/L		106	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	41.0		ng/L		103	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*89*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*91*		*50 - 150*
13C5 PFNA	*94*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*91*		*50 - 150*
13C2 PFDoA	*88*		*50 - 150*
13C2 PFTeDA	*77*		*50 - 150*
13C3 PFBS	*89*		*50 - 150*
13C2 PFHxDA	*31*	*	*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*96*		*50 - 150*
M2-6:2 FTS	*100*		*50 - 150*
M2-8:2 FTS	*94*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-305366/3-A
Matrix: Water
Analysis Batch: 305690

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 305366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	42.3		ng/L		106	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	41.0		ng/L		102	66 - 126	5	30
Perfluorohexanoic acid (PFHxA)			40.0	42.9		ng/L		107	66 - 126	8	30
Perfluoroheptanoic acid (PFHpA)			40.0	41.2		ng/L		103	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	41.2		ng/L		103	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	43.5		ng/L		109	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	44.0		ng/L		110	69 - 129	3	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.5		ng/L		99	60 - 120	0	30
Perfluorododecanoic acid (PFDoA)			40.0	42.3		ng/L		106	71 - 131	3	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.3		ng/L		103	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	40.0		ng/L		100	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	40.7		ng/L		115	73 - 133	6	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.6		ng/L		98	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	41.3		ng/L		109	68 - 128	6	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.4		ng/L		95	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.5		ng/L		97	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.6		ng/L		99	67 - 127	3	30
6:2 FTS			37.9	40.0		ng/L		105	66 - 126	3	30
8:2 FTS			38.3	42.4		ng/L		111	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.5		ng/L		104	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*90*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*91*		*50 - 150*
13C5 PFNA	*95*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*94*		*50 - 150*
13C2 PFDoA	*90*		*50 - 150*
13C2 PFTeDA	*82*		*50 - 150*
13C3 PFBS	*84*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*98*		*50 - 150*
M2-6:2 FTS	*103*		*50 - 150*
M2-8:2 FTS	*95*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

LCMS

Prep Batch: 305366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51801-1	MTBE_2800	Total/NA	Water	3535	
MB 320-305366/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-305366/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-305366/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 305690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51801-1	MTBE_2800	Total/NA	Water	EPA 537(Mod)	305366
MB 320-305366/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	305366
LCS 320-305366/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	305366
LCSD 320-305366/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	305366

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Client Sample ID: MTBE_2800

Date Collected: 06/20/19 11:55
Date Received: 06/27/19 09:35

Lab Sample ID: 320-51801-1

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			273.3 mL	10.00 mL	305366	07/03/19 05:43	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			305690	07/04/19 16:53	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51801-1
Project/Site: DWGTF_Londonderry
SDG: 19 Teton Drive - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51801-1
SDG: 19 Teton Drive - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51801-1	MTBE_2800	Water	06/20/19 11:55	06/27/19 09:35	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MtBE_1125	6-20-19	1155	G	DW	N		X	2	19 Tetson Drive

320-51801 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6-20-19 / 1555	Nobis Group	refrigerator	6-20-19 / 1555	Nobis Group
refrigerator	6/21/2019 @ 9:00am	Nobis Group	Katie Lopes	6/21/2019 @ 9:00am	Nobis Group
[signature]	6/21/2019 @ 9:20am	Nobis Group	[signature]	6/21/19 9:20 am	NHDES

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.: 806015
Cooler Temperature(s) °C and Other Remarks: 1.6

6/26/19 1402 Shipping Cooler 6/26/19 1402 2.3°C Received: [signature] ETA-JAC 6/27/19 935

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Stephanie Nstico	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-271-7175	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environmental Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: Stratham FD	Project #: Stratham FD			
Site: Stratham, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-9330	6/21/19	11:11	G	W	N	N	X	2	15 College Rd
MTBE-9331	6/21/19	11:33	G	W	N	N	X	2	17 Winnicutt Rd

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client X [ ] Disposal By Lab [ ] Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6/21/19 15:18	NHDES	Cold Storage 0.3°C	6/21/19 15:18	NHDES
[signature]	6/26/19 1402	NHDES	Shipping Cooler	6/26/19 1402	2.3°C
			[signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806015
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Stephanie Nistico	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No.
Client Contact: Derek Bennett	Phone: 603-271-7175	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environmental Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: Bodwell Septage	~~Bodwell Septage~~ General PWS: Bodwell Septage			
Site: Kensington, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-9332	6/21/19	13:45	G	W	N	N	X	2	146 Drinkwater Rd

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6/21/19 15:18	NHDES	Cold Storage 03	6/21/19 15:18	NHDES
[signature]	6/26/19 1402	NHDES	Shipping Cooler	6/26/19 1402	2.3°C
			[signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806015
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Anna Heard	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-271-8538	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF	Project #: DWGTF			
Site: Hinsdale, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Group 8 (22 Analytes)										Total Number of containers	Special Instructions/Note: (Address and Group No.)
			Preservation Code:															
MTBE_8613	6·24·19	10:22	G	W	N	N	X										2	63 Oxbow Rd

Possible Hazard Identification
■ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6·24·19 14:41	NHDES	NHDES Cold Storage Temp: 4.3°C	6·24·19 14:41	NHDES
[signature]	6/26/19 1402	NHDES	NHDES Shipping Cooler Temp: 2.3°C	6/26/19 1402	NHDES
			[signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 806015

Cooler Temperature(s) °C and Other Remarks: 1-6

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-074	6-26-19	0820	G	DW	N		X	2	25 Coteville Rd.

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6/26/19 13:33	NUBS	[signature] NHDES Cold Storage	6/26/19 13:33 (0.6°C)	NHDES
[signature]	6/26/19 1402	NHDES	Shipping Cooler	6/26/19 1402	2.3°C
Relinquished by:	Date/Time:	Company	Received by: [signature]	6/27/19 935	ETA-SAC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 806015 | Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

eurofins | Environment Testing TestAmerica

Sacramento Sample Receiving Notes

320-51801 Field Sheet

Job:

Tracking # :

SO / PO / FO / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

MAN 6/27/19

Therm. ID: IR Stem Corr. Factor: –

Ice ✓ Wet ✓ Gel ____ Other ____

Cooler Custody Seal: 806015

Sample Custody Seal: –

Cooler ID: –

Temp Observed: 1.6°C Corrected: 1.6°C

From: Temp Blank ☐ Sample ☑

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: MAN Date: 6/27/19

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Part # 1694TD-434 RITZ EXP 11/19-4

ORIGIN ID:PHDA (603) 271-8483
SHARON LEWANDOWSKI
NHDES MTBE REMEDIATION BUREAU
29 HAZEN DR

CONCORD, NH 033016503
UNITED STATES US

SHIP DATE: 29APR19
ACTWGT: 10.00 LB MAN
CAD: 0562065/CAFE3211

TO SAMPLE RECEIVING
TESTAMERICA WEST SACRAMENTO
880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605
(916) 373-5600
REF: S480-129630

RMA:

FedEx
Expre

FedEx
TRK# 0221 4917 8544 6463

THU - 27 JUN 10:30A
PRIORITY OVERNIGHT

XH BLUA

9560
CA-US SM

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
806015

Custody Seal
DATE
SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
806015

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51801-1
SDG Number: 19 Teton Drive - Londonderry, NH

Login Number: 51801
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806015
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190813206

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

18 Chenell Drive Concord NH , 03301:

13 August 2019

Enclosed are the results of analytical testing performed on the following samples:

NOTE: This report was revised on August 13, 2019 as follows:

The sample location was corrected to "MtBE_2800" per request of Nobis Engineering.

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119062368.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**MtBE_2800, 19 Teton Drive**	Drinking Water	20-Jun-19 11:55	20-Jun-19 12:43

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 13-Aug-19 15:12

REPORT OF ANALYSIS

sampled Date: 20-Jun-2019 11:55

119062368.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
MtBE_2800, 19 Teton Drive

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/21/2019 15:15	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/21/2019 17:10	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/22/2019 19:40	EPA 200.8	RT
Barium	0.016	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/22/2019 19:40	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/27/2019 13:01	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/27/2019 13:01	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT

AQUARIAN ANALYTICAL LAB

1906-2368

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

RP190813206

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE – 1125 18 Teton Drive	6-20-19/1155	DW	1														X					X							

Date Rec'd: 6/20/19 Time Rec'd: 1243 Temp Rec'd: 6.9
Rec'd by: [illegible] Location: [illegible]
Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC__MIN 40ML__HCL__LC__OTHER__

Relinquished by:	Date/Time:	Received by:
[signature]	6/20/19 1243	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 6.9 °C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required?____Yes____No
Is this NH "Odd Fund" related?____Yes____No
Does a price quote apply?____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Wednesday, July 03, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060405

Lab ID: 19060405
Date Received: 6/25/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060405
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060405
Date: 7/3/2019

Lab ID: 19060405

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060405-001	EPA 524.2	MTBE_2800	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060405
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 19 Teton Dr Londonderry NH

Analytical Results

Lab ID: 19060405
Date: 7/3/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060405-001	MTBE_2800	6/20/2019 11:55:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB

317 Elm Street
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Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060405-001	MTBE_2800	6/20/2019 11:55:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/28/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 1 ug/L			6/28/2019	1	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/28/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/28/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/28/2019	0.5	LauraB

317 Elm Street
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51558-2
Laboratory SDG: 7 Gardner Circle - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
7/16/2019 11:47:13 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51558-2
Project/Site: DWGTF_Londonderry
SDG: 7 Gardner Circle - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51558-2

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51558-2

Receipt
The samples were received on 6/21/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCSD 320-304060/3-A) and (MB 320-304060/1-A). The samples were re-analyzed with concurring results. 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(s). All detection limits are below the lower calibration.

Method(s) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte.
MTBE_4073 (320-51558-2) and (LCSD 320-304060/3-A)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-304060.

320-304060
Method: 3535 PFC-W

Method(s) 3535: The following sample was preserved in Trizma, therefore, the QC's (MB, LCS, LCSD) contained Trizma: MTBE_4073 (320-51558-2).

320-304060
Method: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

Client Sample ID: MTBE_4073

Lab Sample ID: 320-51558-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.0		1.8	0.32	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.6	J	1.8	0.44	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.6	J I	1.8	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.79	J	1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	4.5		1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.4		1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3	J B	1.8	0.15	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	J I	1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

Client Sample ID: MTBE_4073

Date Collected: 06/17/19 15:50
Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-2

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.0**		1.8	0.32	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluoropentanoic acid (PFPeA)	**1.6**	**J**	1.8	0.44	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorohexanoic acid (PFHxA)	**1.6**	**J I**	1.8	0.53	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluoroheptanoic acid (PFHpA)	**0.79**	**J**	1.8	0.23	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorooctanoic acid (PFOA)	**4.5**		1.8	0.77	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorobutanesulfonic acid (PFBS)	**2.4**		1.8	0.18	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorohexanesulfonic acid (PFHxS)	**1.3**	**J B**	1.8	0.15	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorooctanesulfonic acid (PFOS)	**1.5**	**J I**	1.8	0.49	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		06/27/19 05:00	06/30/19 07:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		06/27/19 05:00	06/30/19 07:24	1
6:2 FTS	ND		9.1	1.8	ng/L		06/27/19 05:00	06/30/19 07:24	1
8:2 FTS	ND		1.8	0.34	ng/L		06/27/19 05:00	06/30/19 07:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.81	ng/L		06/27/19 05:00	06/30/19 07:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C2 PFHxA	*86*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C4 PFHpA	*91*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C4 PFOA	*94*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C5 PFNA	*93*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C2 PFUnA	*92*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C2 PFDoA	*87*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C2 PFTeDA	*81*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C3 PFBS	*90*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C2 PFHxDA	*52*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
18O2 PFHxS	*92*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
d3-NMeFOSAA	*99*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
M2-6:2 FTS	*107*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*06/27/19 05:00*	*06/30/19 07:24*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51558-2	MTBE_4073	82	91	86	91	94	93	94	92
LCS 320-304060/2-A	Lab Control Sample	82	87	84	88	90	92	91	87
LCSD 320-304060/3-A	Lab Control Sample Dup	86	88	90	92	95	95	92	92
MB 320-304060/1-A	Method Blank	84	91	88	95	93	95	98	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51558-2	MTBE_4073	87	81	90	52	92	91	99	107
LCS 320-304060/2-A	Lab Control Sample	80	80	89	51	92	89	94	93
LCSD 320-304060/3-A	Lab Control Sample Dup	83	79	89	42 *	91	91	95	106
MB 320-304060/1-A	Method Blank	85	77	89	42 *	89	89	97	99

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51558-2	MTBE_4073	97
LCS 320-304060/2-A	Lab Control Sample	94
LCSD 320-304060/3-A	Lab Control Sample Dup	96
MB 320-304060/1-A	Method Blank	99

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-304060/1-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 304060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorotetradecanoic acid (PFTeA)	0.345	J	2.0	0.29	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorohexanesulfonic acid (PFHxS)	0.324	J	2.0	0.17	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/27/19 05:00	06/30/19 05:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/27/19 05:00	06/30/19 05:08	1
6:2 FTS	ND		10	2.0	ng/L		06/27/19 05:00	06/30/19 05:08	1
8:2 FTS	ND		2.0	0.38	ng/L		06/27/19 05:00	06/30/19 05:08	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/27/19 05:00	06/30/19 05:08	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C4 PFOA	*93*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C5 PFNA	*95*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFDoA	*85*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFTeDA	*77*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C2 PFHxDA	*42*	*	*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
18O2 PFHxS	*89*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
13C4 PFOS	*89*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
M2-6:2 FTS	*99*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*
M2-8:2 FTS	*99*		*50 - 150*	*06/27/19 05:00*	*06/30/19 05:08*	*1*

Lab Sample ID: LCS 320-304060/2-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 304060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-304060/2-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 304060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.5		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	38.2		ng/L		96	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.1		ng/L		100	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.8		ng/L		94	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.4		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.1		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.0		ng/L		92	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	42.5		ng/L		106	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	40.6		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	40.4		ng/L		101	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	35.2		ng/L		100	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.0		ng/L		91	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.6		ng/L		99	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.0		ng/L		97	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.2		ng/L		91	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.2		ng/L		101	67 - 127
6:2 FTS	37.9	39.5		ng/L		104	66 - 126
8:2 FTS	38.3	39.4		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.8		ng/L		102	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*82*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*84*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*90*		*50 - 150*
13C5 PFNA	*92*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*80*		*50 - 150*
13C2 PFTeDA	*80*		*50 - 150*
13C3 PFBS	*89*		*50 - 150*
13C2 PFHxDA	*51*		*50 - 150*
18O2 PFHxS	*92*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*94*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*94*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-304060/3-A
Matrix: Water
Analysis Batch: 304828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 304060

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.3		ng/L		101	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	38.7		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	38.0		ng/L		95	66 - 126	0	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.8		ng/L		99	66 - 126	1	30
Perfluorooctanoic acid (PFOA)			40.0	37.2		ng/L		93	64 - 124	2	30
Perfluorononanoic acid (PFNA)			40.0	39.4		ng/L		99	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	36.9		ng/L		92	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	34.1		ng/L		85	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.2		ng/L		96	71 - 131	11	30
Perfluorotridecanoic acid (PFTriA)			40.0	39.7		ng/L		99	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	41.0		ng/L		102	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.0		ng/L		99	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	37.6		ng/L		99	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.4		ng/L		95	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)			38.6	34.6		ng/L		90	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	43.9		ng/L		110	67 - 127	9	30
6:2 FTS			37.9	35.5		ng/L		94	66 - 126	11	30
8:2 FTS			38.3	36.5		ng/L		95	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	39.3	I	ng/L		98	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*92*		*50 - 150*
13C4 PFOA	*95*		*50 - 150*
13C5 PFNA	*95*		*50 - 150*
13C2 PFDA	*92*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*83*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*89*		*50 - 150*
13C2 PFHxDA	*42*	*	*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*106*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

LCMS

Prep Batch: 304060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51558-2	MTBE_4073	Total/NA	Water	3535	
MB 320-304060/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-304060/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-304060/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 304828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51558-2	MTBE_4073	Total/NA	Water	EPA 537(Mod)	304060
MB 320-304060/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	304060
LCS 320-304060/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	304060
LCSD 320-304060/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	304060

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

Client Sample ID: MTBE_4073

Date Collected: 06/17/19 15:50
Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-2

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			275.9 mL	10.0 mL	304060	06/27/19 05:00	MTN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			304828	06/30/19 07:24	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-51558-2
Project/Site: DWGTF_Londonderry
SDG: 7 Gardner Circle - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51558-2
SDG: 7 Gardner Circle - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51558-2	MTBE_4073	Water	06/17/19 15:50	06/21/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4761 6866 7137

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC - IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-072	6-17-19	1020	G	DW	N		X	2	8 Sara Beth Ln
MTBE-407.3	6-17-19	1550	G	DW	N		X	2	7 Gardner Circle
NOB-073	6-18-19	1020	G	DW	N		X	2	5 Wilson Rd.

320-51558 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 6-18-19/1515 (0.7°C)	Company: Nob's Group	Received by: NHDES Cold Storage	Date/Time: 6/18/19 15:15	Company: NHDES
Relinquished by:	Date/Time: 6/20/19 1350	Company: NHDES	Received by: Shipping Cooler	Date/Time: 6/20/19 1350	Company: —
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 6/21/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806035
Cooler Temperature(s) °C and Other Remarks: 1.4

2.6

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51558-2
SDG Number: 7 Gardner Circle - Londonderry, NH

Login Number: 51558
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806035
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627083

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061941.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_072**	Drinking Water	17-Jun-19 10:20	17-Jun-19 16:30
119061941.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**MTBE_4073**	Drinking Water	17-Jun-19 15:50	17-Jun-19 16:30

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP190627083

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 16:20

REPORT OF ANALYSIS

119061941.02

Londonderry WQ Eval.,
Londonderry, NH, #95160.00

MTBE_4073

sampled Date: 17-Jun-2019 03:50

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	06/18/2019 12:00	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	06/18/2019 12:25	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.003	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Barium	0.037	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/27/2019 13:01	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/27/2019 13:01	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/27/2019 13:01	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/27/2019 13:01	EPA 200.8	RT

RP190627083

te Rec'd: 6/17/19 Time Rec'd: 1630 Temp Rec'd: 2.6
c'd by: Location:
oler: Y NA Ice:
lorine: Pos Neg
ttle: TC__ MIN 40ML__ HCL__ LC__ OTHER____

1906 - 1941 (1-2)

AQUARIAN ANALYTICAL LAB

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 5087 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-072	6-17-19/1020	DW	1														X				X								1
MTBE-4073	6-17-19/1550	DW	1														X				X								2

Relinquished by:	Date/Time:	Received by:
[signature]	6/17/19 1630	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 2.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Wednesday, July 03, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060323

Lab ID: 19060323
Date Received: 6/20/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060323
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060323
Date: 7/3/2019

Lab ID: 19060323

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060323-001	EPA 524.2	NOB_072	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060323
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 7 Gardner Circle Londonderry NH

Analytical Results

Lab ID: 19060323
Date: 7/3/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060323-002	MTBE_4073	6/17/2019 3:50:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/26/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/26/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/26/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/26/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/26/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/26/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060323-002	MTBE_4073	6/17/2019 3:50:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/26/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/26/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/26/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/26/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-5
Laboratory SDG: 9 Acropolis Ave. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:21:44 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-5

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-5

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Client Sample ID: MTBE_1115

Lab Sample ID: 320-50330-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.9	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.5		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8	J B	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	9.4		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.34	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.35	J B	1.9	0.28	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.2	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.18	J	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	24	B	9.5	1.9	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Client Sample ID: MTBE_1115

Date Collected: 05/09/19 10:35
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-5

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.9**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluoropentanoic acid (PFPeA)	**2.5**		1.9	0.47	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorohexanoic acid (PFHxA)	**3.3**		1.9	0.55	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluoroheptanoic acid (PFHpA)	**1.8**	**J B**	1.9	0.24	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorooctanoic acid (PFOA)	**9.4**		1.9	0.81	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorononanoic acid (PFNA)	**0.34**	**J**	1.9	0.26	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorotetradecanoic acid (PFTeA)	**0.35**	**J B**	1.9	0.28	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorobutanesulfonic acid (PFBS)	**4.2**	**B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**	**J B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.18**	**J**	1.9	0.18	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorooctanesulfonic acid (PFOS)	**3.6**		1.9	0.51	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 22:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:02	1
6:2 FTS	**24**	**B**	9.5	1.9	ng/L		05/22/19 09:19	05/27/19 22:02	1
8:2 FTS	ND		1.9	0.36	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/22/19 09:19	05/27/19 22:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C5 PFPeA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C2 PFHxA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C4 PFHpA	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C4 PFOA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C2 PFDA	*104*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C2 PFUnA	*104*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C2 PFDoA	*105*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C2 PFTeDA	*102*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C2 PFHxDA	*71*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
d3-NMeFOSAA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
M2-6:2 FTS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*
M2-8:2 FTS	*108*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:02*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-5	MTBE_1115	90	94	94	93	99	101	104	104
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-5	MTBE_1115	105	102	100	71	95	96	90	87
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-5	MTBE_1115	108
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-5	MTBE_1115	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-5	MTBE_1115	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Client Sample ID: MTBE_1115

Date Collected: 05/09/19 10:35
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-5

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			263.3 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 22:02	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-5
Project/Site: TrustFund_Londonderry
SDG: 9 Acropolis Ave. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-5
SDG: 9 Acropolis Ave. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-5	MTBE_1115	Water	05/09/19 10:35	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact: ☒ Yes Δ No
Custody Seal No.: 30612
Cooler Temperature(s) °C and Other Remarks: 1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-5
SDG Number: 9 Acropolis Ave. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

sampled Date: 09-May-2019 10:35

119051162.04

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00

Drinking Water, MTBE_1115

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.006	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-005	MTBE_1115	5/9/2019 10:35:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-005	MTBE_1115	5/9/2019 10:35:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-3
Laboratory SDG: 15 Tyler Rd. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:18:43 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-3

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-3

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Client Sample ID: NOB_044

Lab Sample ID: 320-50330-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.6	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.7		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.0		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.2	B	1.9	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	16		1.9	0.79	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.45	J	1.9	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.27	J B	1.9	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	8.5	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.3		1.9	0.50	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	3.8	J B	9.3	1.9	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Client Sample ID: NOB_044

Date Collected: 05/09/19 09:25
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-3

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.6**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluoropentanoic acid (PFPeA)	**5.7**		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorohexanoic acid (PFHxA)	**7.0**		1.9	0.54	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluoroheptanoic acid (PFHpA)	**3.2**	**B**	1.9	0.23	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorooctanoic acid (PFOA)	**16**		1.9	0.79	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorononanoic acid (PFNA)	**0.45**	**J**	1.9	0.25	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorotetradecanoic acid (PFTeA)	**0.27**	**J B**	1.9	0.27	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorobutanesulfonic acid (PFBS)	**8.5**	**B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorohexanesulfonic acid (PFHxS)	**2.8**	**B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorooctanesulfonic acid (PFOS)	**5.3**		1.9	0.50	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 21:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		05/22/19 09:19	05/27/19 21:46	1
6:2 FTS	**3.8**	**J B**	9.3	1.9	ng/L		05/22/19 09:19	05/27/19 21:46	1
8:2 FTS	ND		1.9	0.35	ng/L		05/22/19 09:19	05/27/19 21:46	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.83	ng/L		05/22/19 09:19	05/27/19 21:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C5 PFPeA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C2 PFHxA	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C4 PFHpA	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C4 PFOA	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C5 PFNA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C2 PFDA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C2 PFUnA	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C2 PFDoA	*100*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C2 PFTeDA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C3 PFBS	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C2 PFHxDA	*63*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
13C4 PFOS	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
d3-NMeFOSAA	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
M2-6:2 FTS	*73*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*
M2-8:2 FTS	*98*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:46*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-3	NOB_044	84	90	87	91	97	95	94	97
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-3	NOB_044	100	89	97	63	95	94	88	73
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-3	NOB_044	98
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-3	NOB_044	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-3	NOB_044	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Client Sample ID: NOB_044

Date Collected: 05/09/19 09:25
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-3

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			267.4 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 21:46	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-3
Project/Site: TrustFund_Londonderry
SDG: 15 Tyler Rd. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-3
SDG: 15 Tyler Rd. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-3	NOB_044	Water	05/09/19 09:25	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact: ☒ Yes Δ No
Custody Seal No.: 30612
Cooler Temperature(s) °C and Other Remarks: 1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-3
SDG Number: 15 Tyler Rd. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

sampled Date: 09-May-2019 09:25

119051162.02

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00

Drinking Water, NOB_044, Tyler Rd,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	0.003	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 15 Tyler Rd Londonderry NH

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-003	NOB_044	5/9/2019 9:25:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-003	NOB_044	5/9/2019 9:25:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-8
Laboratory SDG: 111 West Rd. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry
Revision: 1

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
8/1/2019 10:01:03 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Job ID: 320-50330-8

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-8

Revision 1
The report is revised to correct the assigned SDG project location description per client.

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Client Sample ID: NOB_046

Lab Sample ID: 320-50330-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.8	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.8		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.0		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.6	B	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	41		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.65	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.30	J B	1.9	0.28	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.7	J B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	3.2	J B	9.5	1.9	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Client Sample ID: NOB_046

Date Collected: 05/09/19 12:40
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-8

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.8**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluoropentanoic acid (PFPeA)	**2.8**		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorohexanoic acid (PFHxA)	**5.0**		1.9	0.55	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluoroheptanoic acid (PFHpA)	**6.6**	**B**	1.9	0.24	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorooctanoic acid (PFOA)	**41**		1.9	0.81	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorononanoic acid (PFNA)	**0.65**	**J**	1.9	0.26	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorotetradecanoic acid (PFTeA)	**0.30**	**J B**	1.9	0.28	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorobutanesulfonic acid (PFBS)	**1.7**	**J B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorohexanesulfonic acid (PFHxS)	**1.3**	**J B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorooctanesulfonic acid (PFOS)	**3.6**	**I**	1.9	0.51	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 22:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:42	1
6:2 FTS	**3.2**	**J B**	9.5	1.9	ng/L		05/22/19 09:19	05/27/19 22:42	1
8:2 FTS	ND		1.9	0.36	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/22/19 09:19	05/27/19 22:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C5 PFPeA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C2 PFHxA	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C4 PFHpA	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C4 PFOA	*98*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C5 PFNA	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C2 PFDA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C2 PFUnA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C2 PFDoA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C2 PFTeDA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C3 PFBS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C2 PFHxDA	*60*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
18O2 PFHxS	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
d3-NMeFOSAA	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
M2-6:2 FTS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*
M2-8:2 FTS	*106*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:42*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-8	NOB_046	82	94	93	91	98	93	99	94
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-8	NOB_046	96	86	95	60	93	91	87	87
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-8	NOB_046	106
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-8	NOB_046	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-8	NOB_046	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Client Sample ID: NOB_046

Date Collected: 05/09/19 12:40
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-8

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			263.5 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 22:42	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-8
Project/Site: TrustFund_Londonderry
SDG: 111 West Rd. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-8
SDG: 111 West Rd. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-8	NOB_046	Water	05/09/19 12:40	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
☒ Yes Δ No	306012	1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-8
SDG Number: 111 West Rd. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

119051162.07

Londonderry GW Quality Eval, Londonderry, NH, #95160.00

Drinking Water, NOB_046, 111 West Road, Londonderry, NH

sampled Date: 09-May-2019 12:40

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	0.014	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 111 West Rd Londonderry NH

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-008	NOB_046	5/9/2019 12:40:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-008	NOB_046	5/9/2019 12:40:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-2
Laboratory SDG: 12 Mont Vernon Dr - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:28:36 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50812-2
Project/Site: DWGTF_Londonderry
SDG: 12 Mont Vernon Dr - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-2

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-2

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298920.

320-298920
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

Client Sample ID: NOB_051

Lab Sample ID: 320-50812-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.8		1.8	0.32	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	6.1		1.8	0.44	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.3		1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.1		1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	16		1.8	0.77	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.60	J	1.8	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.1		1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8	B	1.8	0.15	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.20	J I	1.8	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.9	I	1.8	0.49	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

Client Sample ID: NOB_051

Date Collected: 05/21/19 09:45
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-2

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.8**		1.8	0.32	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluoropentanoic acid (PFPeA)	**6.1**		1.8	0.44	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorohexanoic acid (PFHxA)	**7.3**		1.8	0.52	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluoroheptanoic acid (PFHpA)	**4.1**		1.8	0.23	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorooctanoic acid (PFOA)	**16**		1.8	0.77	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorononanoic acid (PFNA)	**0.60**	**J**	1.8	0.24	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorobutanesulfonic acid (PFBS)	**6.1**		1.8	0.18	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorohexanesulfonic acid (PFHxS)	**2.8**	**B**	1.8	0.15	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.20**	**J I**	1.8	0.17	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorooctanesulfonic acid (PFOS)	**4.9**	**I**	1.8	0.49	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		06/04/19 06:31	06/05/19 03:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		06/04/19 06:31	06/05/19 03:36	1
6:2 FTS	ND		9.0	1.8	ng/L		06/04/19 06:31	06/05/19 03:36	1
8:2 FTS	ND		1.8	0.34	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.80	ng/L		06/04/19 06:31	06/05/19 03:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C5 PFPeA	*87*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C4 PFHpA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C2 PFDoA	*87*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C2 PFTeDA	*76*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C3 PFBS	*86*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C2 PFHxDA	*50*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
18O2 PFHxS	*84*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
13C4 PFOS	*83*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
d3-NMeFOSAA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
M2-6:2 FTS	*103*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:36*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-2	NOB_051	73	87	88	91	91	90	95	90
LCS 320-298920/2-A	Lab Control Sample	86	90	89	94	93	88	94	91
LCSD 320-298920/3-A	Lab Control Sample Dup	92	101	98	96	98	99	102	93
MB 320-298920/1-A	Method Blank	90	99	98	93	91	90	94	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-2	NOB_051	87	76	86	50	84	83	91	103
LCS 320-298920/2-A	Lab Control Sample	89	77	85	50	86	81	91	94
LCSD 320-298920/3-A	Lab Control Sample Dup	96	82	93	51	94	87	93	104
MB 320-298920/1-A	Method Blank	96	79	91	51	88	83	91	99

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-2	NOB_051	97
LCS 320-298920/2-A	Lab Control Sample	89
LCSD 320-298920/3-A	Lab Control Sample Dup	96
MB 320-298920/1-A	Method Blank	92

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298920/1-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298920

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorohexanesulfonic acid (PFHxS)	0.388	J	2.0	0.17	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:31	06/05/19 03:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:31	06/05/19 03:04	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:31	06/05/19 03:04	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:31	06/05/19 03:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:31	06/05/19 03:04	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C5 PFPeA	*99*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFHxA	*98*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFUnA	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFDoA	*96*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFTeDA	*79*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
13C4 PFOS	*83*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
d3-NMeFOSAA	*91*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
M2-6:2 FTS	*99*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*
M2-8:2 FTS	*92*		*50 - 150*	*06/04/19 06:31*	*06/05/19 03:04*	*1*

Lab Sample ID: LCS 320-298920/2-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298920/2-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	40.4		ng/L		101	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	38.3		ng/L		96	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	38.4		ng/L		96	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.3		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.5		ng/L		96	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	35.0		ng/L		87	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	38.9		ng/L		97	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	37.0		ng/L		92	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.1		ng/L		90	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	38.1		ng/L		108	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.7		ng/L		98	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.9		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.0		ng/L		100	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	37.3		ng/L		97	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.0		ng/L		100	67 - 127
6:2 FTS	37.9	41.6		ng/L		110	66 - 126
8:2 FTS	38.3	40.5		ng/L		106	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.0		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*90*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*93*		*50 - 150*
13C5 PFNA	*88*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*91*		*50 - 150*
13C2 PFDoA	*89*		*50 - 150*
13C2 PFTeDA	*77*		*50 - 150*
13C3 PFBS	*85*		*50 - 150*
13C2 PFHxDA	*50*		*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*81*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298920/3-A
Matrix: Water
Analysis Batch: 299166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298920

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.2		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.2		ng/L		95	66 - 126	6	30
Perfluorohexanoic acid (PFHxA)			40.0	38.4		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	3	30
Perfluorooctanoic acid (PFOA)			40.0	37.6		ng/L		94	64 - 124	2	30
Perfluorononanoic acid (PFNA)			40.0	38.6		ng/L		96	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	37.5		ng/L		94	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.5		ng/L		96	60 - 120	10	30
Perfluorododecanoic acid (PFDoA)			40.0	38.1		ng/L		95	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	35.9		ng/L		90	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	68 - 128	4	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.8		ng/L		104	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.0		ng/L		91	63 - 123	8	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.7		ng/L		104	68 - 128	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.3		ng/L		98	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)			38.6	36.1		ng/L		94	68 - 128	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	41.8		ng/L		104	67 - 127	4	30
6:2 FTS			37.9	39.5		ng/L		104	66 - 126	5	30
8:2 FTS			38.3	38.8		ng/L		101	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.8		ng/L		97	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*92*		*50 - 150*
13C5 PFPeA	*101*		*50 - 150*
13C2 PFHxA	*98*		*50 - 150*
13C4 PFHpA	*96*		*50 - 150*
13C4 PFOA	*98*		*50 - 150*
13C5 PFNA	*99*		*50 - 150*
13C2 PFDA	*102*		*50 - 150*
13C2 PFUnA	*93*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*82*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*51*		*50 - 150*
18O2 PFHxS	*94*		*50 - 150*
13C4 PFOS	*87*		*50 - 150*
d3-NMeFOSAA	*93*		*50 - 150*
M2-6:2 FTS	*104*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

LCMS

Prep Batch: 298920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-2	NOB_051	Total/NA	Water	3535	
MB 320-298920/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298920/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298920/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-2	NOB_051	Total/NA	Water	EPA 537(Mod)	298920
MB 320-298920/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298920
LCS 320-298920/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298920
LCSD 320-298920/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298920

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

Client Sample ID: NOB_051

Date Collected: 05/21/19 09:45
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-2

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			276.7 mL	10.0 mL	298920	06/04/19 06:31	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299166	06/05/19 03:36	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50812-2
Project/Site: DWGTF_Londonderry
SDG: 12 Mont Vernon Dr - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-2
SDG: 12 Mont Vernon Dr - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-2	NOB_051	Water	05/21/19 09:45	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-2
SDG Number: 12 Mont Vernon Dr - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 09:45

119052561.02

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00

Drinking Water, NOB_051

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.4	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 12 Mont Vernon Dr Londonderry NH

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-003	NOB_051	5/21/2019 9:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/3/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/3/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/3/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/3/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/3/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/3/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/3/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-003	NOB_051	5/21/2019 9:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/3/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/3/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 1 ug/L			6/3/2019	1	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/3/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/3/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/3/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/3/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-6
Laboratory SDG: 25 Sev Severance Dr. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:23:08 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-6

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-6

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-6
SDG: 25 Sev Severance Dr. - Londonderry, NH

Client Sample ID: NOB_045

Lab Sample ID: 320-50330-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.1	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.7		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.1		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.6	B	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	13		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.33	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	11	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.3	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.27	J	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.3	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	2.3	J B	9.5	1.9	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-6
SDG: 25 Sev Severance Dr. - Londonderry, NH

Client Sample ID: NOB_045

Date Collected: 05/09/19 11:15
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-6

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.1**	**B**	1.9	0.33	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluoropentanoic acid (PFPeA)	**3.7**		1.9	0.47	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorohexanoic acid (PFHxA)	**5.1**		1.9	0.55	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluoroheptanoic acid (PFHpA)	**2.6**	**B**	1.9	0.24	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorooctanoic acid (PFOA)	**13**		1.9	0.81	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorononanoic acid (PFNA)	**0.33**	**J**	1.9	0.26	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorobutanesulfonic acid (PFBS)	**11**	**B**	1.9	0.19	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorohexanesulfonic acid (PFHxS)	**4.3**	**B**	1.9	0.16	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.27**	**J**	1.9	0.18	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorooctanesulfonic acid (PFOS)	**4.3**	**I**	1.9	0.51	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	06/04/19 13:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	06/04/19 13:13	1
6:2 FTS	**2.3**	**J B**	9.5	1.9	ng/L		05/22/19 09:19	06/04/19 13:13	1
8:2 FTS	ND		1.9	0.36	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/22/19 09:19	06/04/19 13:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C5 PFPeA	*97*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C4 PFHpA	*92*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C5 PFNA	*94*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C2 PFUnA	*93*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C2 PFDoA	*92*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C2 PFTeDA	*67*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C3 PFBS	*89*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C2 PFHxDA	*50*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
18O2 PFHxS	*91*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
13C4 PFOS	*87*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
d3-NMeFOSAA	*90*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
M2-6:2 FTS	*107*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*
M2-8:2 FTS	*106*		*50 - 150*	*05/22/19 09:19*	*06/04/19 13:13*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-6
SDG: 25 Sev Severance Dr. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-6	NOB_045	80	97	91	92	95	94	95	93
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-6	NOB_045	92	67	89	50	91	87	90	107
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-6	NOB_045	106
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-6
Project/Site: TrustFund_Londonderry
SDG: 25 Sev Severance Dr. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-6	NOB_045	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Analysis Batch: 299050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-6	NOB_045	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-6
SDG: 25 Sev Severance Dr. - Londonderry, NH

Client Sample ID: NOB_045

Date Collected: 05/09/19 11:15
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-6

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			262.9 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299050	06/04/19 13:13	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-6
Project/Site: TrustFund_Londonderry
SDG: 25 Sev Severance Dr. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-6
SDG: 25 Sev Severance Dr. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-6
SDG: 25 Sev Severance Dr. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-6	NOB_045	Water	05/09/19 11:15	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact: ☒ Yes Δ No
Custody Seal No.: 30612
Cooler Temperature(s) °C and Other Remarks: 1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-6
SDG Number: 25 Sev Severance Dr. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

sampled Date: 09-May-2019 11:15

119051162.05

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00
Drinking Water, NOB_045, 25
Severance Dr, Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 25 Severance Dr Londonderry NH

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-006	NOB_045	5/9/2019 11:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

317 Elm Street
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Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-006	NOB_045	5/9/2019 11:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-9
Laboratory SDG: 95 Mammoth Rd. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry
Revision: 1

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
8/1/2019 10:03:14 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-9

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-9

Revision 1
The report is revised to correct the assigned SDG project location description per client.

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Client Sample ID: MTBE_1118

Lab Sample ID: 320-50330-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	7.2	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	8.8		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	9.4		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.1	B	1.9	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	20		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.98	J	1.9	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.59	J	1.9	0.29	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.3	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	J	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.1		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Client Sample ID: MTBE_1118

Date Collected: 05/09/19 13:45
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-9

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.2**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluoropentanoic acid (PFPeA)	**8.8**		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorohexanoic acid (PFHxA)	**9.4**		1.9	0.54	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluoroheptanoic acid (PFHpA)	**5.1**	**B**	1.9	0.23	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorooctanoic acid (PFOA)	**20**		1.9	0.80	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorononanoic acid (PFNA)	**0.98**	**J**	1.9	0.25	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorodecanoic acid (PFDA)	**0.59**	**J**	1.9	0.29	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorobutanesulfonic acid (PFBS)	**12**	**B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorohexanesulfonic acid (PFHxS)	**6.3**	**B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.23**	**J**	1.9	0.18	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorooctanesulfonic acid (PFOS)	**8.1**		1.9	0.51	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 22:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		05/22/19 09:19	05/27/19 22:50	1
6:2 FTS	ND		9.4	1.9	ng/L		05/22/19 09:19	05/27/19 22:50	1
8:2 FTS	ND		1.9	0.35	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.83	ng/L		05/22/19 09:19	05/27/19 22:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C4 PFHpA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C5 PFNA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C2 PFDA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C2 PFDoA	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C2 PFTeDA	*92*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
18O2 PFHxS	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
13C4 PFOS	*92*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
d3-NMeFOSAA	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
M2-6:2 FTS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*
M2-8:2 FTS	*105*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:50*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-9	MTBE_1118	88	96	91	95	96	99	99	99
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-9	MTBE_1118	91	92	100	57	97	92	87	87
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-9	MTBE_1118	105
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-9	MTBE_1118	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-9	MTBE_1118	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Client Sample ID: MTBE_1118

Date Collected: 05/09/19 13:45
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-9

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			266.5 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 22:50	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-9
Project/Site: TrustFund_Londonderry
SDG: 95 Mammoth Rd. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-9
SDG: 95 Mammoth Rd. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-9	MTBE_1118	Water	05/09/19 13:45	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
☒ Yes Δ No	306012	1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-9
SDG Number: 95 Mammoth Rd. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

sampled Date: 09-May-2019 01:15

119051162.08

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00

Drinking Water, MTBE_1118

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.010	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	0.014	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-009	MTBE_1118	5/9/2019 1:45:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
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Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-009	MTBE_1118	5/9/2019 1:45:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-4
Laboratory SDG: 17 Wilshire Dr. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:20:30 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-4
Project/Site: TrustFund_Londonderry
SDG: 17 Wilshire Dr. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-4

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-4

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Client Sample ID: MTBE_1123

Lab Sample ID: 320-50330-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.7	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.0		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.3		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.5	B	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	9.2		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.27	J B	1.9	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	7.1	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.6	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	J I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Client Sample ID: MTBE_1123

Date Collected: 05/09/19 10:15
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-4

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.7**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluoropentanoic acid (PFPeA)	**3.0**		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorohexanoic acid (PFHxA)	**4.3**		1.9	0.55	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluoroheptanoic acid (PFHpA)	**2.5**	**B**	1.9	0.24	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorooctanoic acid (PFOA)	**9.2**		1.9	0.80	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorotetradecanoic acid (PFTeA)	**0.27**	**J B**	1.9	0.27	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorobutanesulfonic acid (PFBS)	**7.1**	**B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorohexanesulfonic acid (PFHxS)	**1.6**	**J B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**	**J I**	1.9	0.51	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 21:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:54	1
6:2 FTS	ND		9.5	1.9	ng/L		05/22/19 09:19	05/27/19 21:54	1
8:2 FTS	ND		1.9	0.35	ng/L		05/22/19 09:19	05/27/19 21:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/22/19 09:19	05/27/19 21:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C5 PFPeA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C2 PFHxA	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C4 PFHpA	*92*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C4 PFOA	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C2 PFDA	*103*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C2 PFDoA	*100*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C2 PFTeDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C3 PFBS	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C2 PFHxDA	*68*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
18O2 PFHxS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
13C4 PFOS	*98*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
d3-NMeFOSAA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
M2-6:2 FTS	*83*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*
M2-8:2 FTS	*102*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:54*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-4	MTBE_1123	86	94	94	92	97	101	103	98
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-4	MTBE_1123	100	95	97	68	91	98	86	83
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-4	MTBE_1123	102
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-4	MTBE_1123	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-4	MTBE_1123	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Client Sample ID: MTBE_1123

Date Collected: 05/09/19 10:15
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-4

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			264.1 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 21:54	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-4
Project/Site: TrustFund_Londonderry
SDG: 17 Wilshire Dr. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-4
SDG: 17 Wilshire Dr. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-4	MTBE_1123	Water	05/09/19 10:15	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact: ☒ Yes Δ No
Custody Seal No.: 30612
Cooler Temperature(s) °C and Other Remarks: 1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-4
SDG Number: 17 Wilshire Dr. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

119051162.03

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00

Drinking Water, MTBE_1123

sampled Date: 09-May-2019 10:15

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.007	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-004	MTBE_1123	5/9/2019 10:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-004	MTBE_1123	5/9/2019 10:15:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50559-3
Laboratory SDG: 17 Wimbledon Dr - Londonderry, NH
Client Project/Site: DWGTF Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:50:51 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50559-3
Project/Site: DWGTF Londonderry
SDG: 17 Wimbledon Dr - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50559-3

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50559-3

Receipt
The samples were received on 5/22/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) 13C2 PFHxDA recovery associated with the following samples is below the method recommended limit: (LCS 320-297630/2-A), (LCSD 320-297630/3-A) and (MB 320-297630/1-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. The samples were re-analyzed with concurring results and reported with narration. All detection limits are below the lower calibration.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-297630.

Method Code: 3535 PFC

Method(s) 3535: The following sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_049 (320-50559-3).

Method Code: 3535 PFC
preparation batch 320-297630

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

Client Sample ID: NOB_049

Lab Sample ID: 320-50559-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.3		2.0	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.1		2.0	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.4		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.0		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	9.7		2.0	0.83	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.5		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.76	J B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	J I	2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	17		9.8	2.0	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

Client Sample ID: NOB_049

Date Collected: 05/15/19 10:45
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-3

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.3**		2.0	0.34	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluoropentanoic acid (PFPeA)	**4.1**		2.0	0.48	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorohexanoic acid (PFHxA)	**4.4**		2.0	0.57	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluoroheptanoic acid (PFHpA)	**2.0**		2.0	0.25	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorooctanoic acid (PFOA)	**9.7**		2.0	0.83	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.28	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorobutanesulfonic acid (PFBS)	**4.5**		2.0	0.20	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorohexanesulfonic acid (PFHxS)	**0.76**	**J B**	2.0	0.17	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**	**J I**	2.0	0.53	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.31	ng/L		05/29/19 06:30	05/31/19 02:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/29/19 06:30	05/31/19 02:34	1
6:2 FTS	**17**		9.8	2.0	ng/L		05/29/19 06:30	05/31/19 02:34	1
8:2 FTS	ND		2.0	0.37	ng/L		05/29/19 06:30	05/31/19 02:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.87	ng/L		05/29/19 06:30	05/31/19 02:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C5 PFPeA	*91*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C2 PFHxA	*88*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C4 PFHpA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C4 PFOA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C5 PFNA	*97*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C2 PFDA	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C2 PFDoA	*91*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C2 PFTeDA	*94*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C2 PFHxDA	*55*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
18O2 PFHxS	*88*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
13C4 PFOS	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
d3-NMeFOSAA	*90*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
M2-6:2 FTS	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*
M2-8:2 FTS	*102*		*50 - 150*	*05/29/19 06:30*	*05/31/19 02:34*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50559-3	NOB_049	86	91	88	98	98	97	101	98
LCS 320-297630/2-A	Lab Control Sample	90	98	97	99	99	100	91	95
LCSD 320-297630/3-A	Lab Control Sample Dup	90	95	94	92	96	102	95	96
MB 320-297630/1-A	Method Blank	89	95	89	95	95	101	100	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50559-3	NOB_049	91	94	92	55	88	92	90	95
LCS 320-297630/2-A	Lab Control Sample	95	87	87	47 *	95	91	95	94
LCSD 320-297630/3-A	Lab Control Sample Dup	95	88	90	38 *	84	90	92	99
MB 320-297630/1-A	Method Blank	93	82	92	39 *	89	96	95	98

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50559-3	NOB_049	102
LCS 320-297630/2-A	Lab Control Sample	101
LCSD 320-297630/3-A	Lab Control Sample Dup	95
MB 320-297630/1-A	Method Blank	93

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-297630/1-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	0.320	J	2.0	0.17	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/29/19 06:30	05/31/19 01:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/29/19 06:30	05/31/19 01:37	1
6:2 FTS	ND		10	2.0	ng/L		05/29/19 06:30	05/31/19 01:37	1
8:2 FTS	ND		2.0	0.38	ng/L		05/29/19 06:30	05/31/19 01:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/29/19 06:30	05/31/19 01:37	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFHpA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDA	*100*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFDoA	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C2 PFHxDA	*39*	*	*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
13C4 PFOS	*96*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-6:2 FTS	*98*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*
M2-8:2 FTS	*93*		*50 - 150*	*05/29/19 06:30*	*05/31/19 01:37*	*1*

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-297630/2-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.3		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.1		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	37.5		ng/L		94	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	42.4		ng/L		106	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.8		ng/L		99	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.7		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.0		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	41.8		ng/L		104	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.4		ng/L		86	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6		ng/L		112	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.1		ng/L		88	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L		105	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	33.8		ng/L		91	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.0		ng/L		101	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.8		ng/L		97	67 - 127
6:2 FTS	37.9	36.0		ng/L		95	66 - 126
8:2 FTS	38.3	36.3		ng/L		95	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.4		ng/L		94	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*98*		*50 - 150*
13C2 PFHxA	*97*		*50 - 150*
13C4 PFHpA	*99*		*50 - 150*
13C4 PFOA	*99*		*50 - 150*
13C5 PFNA	*100*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*87*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*47*	*	*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*91*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-297630/3-A
Matrix: Water
Analysis Batch: 298173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297630

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.5		ng/L		104	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	37.8		ng/L		94	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	8	30
Perfluorooctanoic acid (PFOA)			40.0	42.1		ng/L		105	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.0		ng/L		97	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.8		ng/L		102	69 - 129	4	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.8		ng/L		97	60 - 120	3	30
Perfluorododecanoic acid (PFDoA)			40.0	39.6		ng/L		99	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.6		ng/L		106	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.5		ng/L		106	73 - 133	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.5		ng/L		98	63 - 123	10	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.8		ng/L		97	67 - 127	6	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.6		ng/L		97	68 - 128	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	40.7		ng/L		102	67 - 127	5	30
6:2 FTS			37.9	38.0		ng/L		100	66 - 126	5	30
8:2 FTS			38.3	39.4		ng/L		103	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	36.9		ng/L		92	72 - 132	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*90*		*50 - 150*
13C5 PFPeA	*95*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*92*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*102*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*95*		*50 - 150*
13C2 PFTeDA	*88*		*50 - 150*
13C3 PFBS	*90*		*50 - 150*
13C2 PFHxDA	*38*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*90*		*50 - 150*
d3-NMeFOSAA	*92*		*50 - 150*
M2-6:2 FTS	*99*		*50 - 150*
M2-8:2 FTS	*95*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

LCMS

Prep Batch: 297630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-3	NOB_049	Total/NA	Water	3535	
MB 320-297630/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 298173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50559-3	NOB_049	Total/NA	Water	EPA 537(Mod)	297630
MB 320-297630/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	297630
LCS 320-297630/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	297630
LCSD 320-297630/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	297630

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

Client Sample ID: NOB_049

Date Collected: 05/15/19 10:45
Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-3

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			254.7 mL	10.00 mL	297630	05/29/19 06:30	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			298173	05/31/19 02:34	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50559-3
Project/Site: DWGTF Londonderry
SDG: 17 Wimbledon Dr - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF Londonderry

Job ID: 320-50559-3
SDG: 17 Wimbledon Dr - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50559-3	NOB_049	Water	05/15/19 10:45	05/22/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kane Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page: 1 of 1
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB-047, 37 Rollinsford, Londonderry, NH	5/15/19	0915	G	DW	N		X	2	
NOB-048, 28 Hazelton, Londonderry, NH	5/15/19	1015	G	DW	N		X	2	
NOB-049, 7 Windsor Dr, Londonderry, NH	5/15/19	1045	G	DW	N		X	2	
NOB-050, 2 Fayette, Londonderry, NH	5/15/19	1135	G	DW	N		X	2	

320-50559 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/15/19 0835	NOB	NHDES Cold Storage	5/17/19 8:45	DES
[signature]	5/21/19 14:00	NHDES	Shipping Cooler 3.8°C	5/21/19 14:00	NHDES
			[signature] 1.6°C	5/22/19 930	EFAW

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50559-3
SDG Number: 17 Wimbledon Dr - Londonderry, NH

Login Number: 50559
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	SEAL
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190520065

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

20 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051813.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_047, 39 Rolling Ridge Rd, Londonderry, NH**	Drinking Water	15-May-19 09:15	15-May-19 12:20
119051813.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_048, 28 Hazelnut Ln, Londonderry, NH**	Drinking Water	15-May-19 10:15	15-May-19 12:20
119051813.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_049, 17 Wimbledon Ln, Londonderry, NH**	Drinking Water	15-May-19 10:45	15-May-19 12:20
119051813.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**NOB_050, 2 Faye Ln, Londonderry, NH**	Drinking Water	15-May-19 11:35	15-May-19 12:20

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 20-May-19 16:01

REPORT OF ANALYSIS

sampled Date: 15-May-2019 10:45

119051813.03

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
NOB_049, 17 Wimbledon Ln,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/15/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/15/2019 17:00	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Barium	0.027	0.01	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Chromium	0.003	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/17/2019 23:38	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/17/2019 12:16	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 17:25	EPA 200.8	SUB2

Date Rec'd: 5/15/19 Time Rec'd: 1220 Temp Rec'd: 2.6
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 4 40ML HCL LC OTHER

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

NABS-1813 (1-4)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190520065

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval.
Town/Site: Londonderry
Sampler: E. Karlsson
Company: Nobis
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB-047, 7 Hillcrest Rd, Londonderry, NH	5/15/19 0915	DW	1														X				X							1
NOB-048, 28 Hazelnut Ln, Londonderry, NH	5/15/19 1015	DW	1														X				X							2
NOB-049, 7 Thistle Ridge, Londonderry, NH	5/15/19 1115	DW	1														X				X							3
NOB-050, 2 Fox Run, Londonderry, NH	5/15/19 1135	DW	1														X				X							4

Relinquished by:	Date/Time:	Received by:
	5/15/19 1220	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 2.6 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes ✓ No
EDD required? ____Yes ✓ No
MCP Compliance required? ____Yes ✓ No
Is this NH "Odd Fund" related? ____Yes ✓ No
Does a price quote apply? ✓ Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
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Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050350

Lab ID: 19050350
Date Received: 5/21/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050350
Date: 6/10/2019

Lab ID: 19050350

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050350-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050350
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 7 Wimbeldon Dr Londonderry NH

Analytical Results

Lab ID: 19050350
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-004	NOB_049	5/15/2019 10:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050350-004	NOB_049	5/15/2019 10:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		6/28/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		6/28/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		6/28/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		6/28/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-52692-2
Laboratory SDG: 4 Morningside Drive - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
8/13/2019 6:17:30 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-52692-2

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-52692-2

Receipt
The samples were received on 7/26/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_075 (320-52692-2), (LCS 320-311450/2-A), (LCSD 320-311450/3-A) and (MB 320-311450/1-A). The samples were re-analyzed with concurring results. 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(s).

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-311450.

320-311450
Method: 3535 PFC-W

Method(s) 3535: The following sample was preserved with Trizma, therefore the MB, LCS and LCSD also contain Trizma: NOB_075 (320-52692-2).

320-311450
Method: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Client Sample ID: NOB_075

Lab Sample ID: 320-52692-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.7		1.7	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.5		1.7	0.42	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		1.7	0.49	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.0		1.7	0.21	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	11		1.7	0.72	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.1	J	1.7	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	11		1.7	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.6	B	1.7	0.14	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.31	J	1.7	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	10		1.7	0.46	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Client Sample ID: NOB_075

Date Collected: 07/18/19 15:15
Date Received: 07/26/19 09:00

Lab Sample ID: 320-52692-2

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.7**		1.7	0.30	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluoropentanoic acid (PFPeA)	**2.5**		1.7	0.42	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorohexanoic acid (PFHxA)	**3.3**		1.7	0.49	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluoroheptanoic acid (PFHpA)	**2.0**		1.7	0.21	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorooctanoic acid (PFOA)	**11**		1.7	0.72	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorononanoic acid (PFNA)	**1.1**	**J**	1.7	0.23	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.47	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorobutanesulfonic acid (PFBS)	**11**		1.7	0.17	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorohexanesulfonic acid (PFHxS)	**4.6**	**B**	1.7	0.14	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.31**	**J**	1.7	0.16	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorooctanesulfonic acid (PFOS)	**10**		1.7	0.46	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.27	ng/L		07/31/19 06:00	08/01/19 11:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.7	1.0	ng/L		07/31/19 06:00	08/01/19 11:04	1
6:2 FTS	ND		8.5	1.7	ng/L		07/31/19 06:00	08/01/19 11:04	1
8:2 FTS	ND		1.7	0.32	ng/L		07/31/19 06:00	08/01/19 11:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.7	0.76	ng/L		07/31/19 06:00	08/01/19 11:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*70*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C5 PFPeA	*77*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C2 PFHxA	*73*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C4 PFHpA	*79*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C4 PFOA	*78*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C5 PFNA	*77*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C2 PFDA	*81*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C2 PFUnA	*78*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C2 PFDoA	*70*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C2 PFTeDA	*71*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C3 PFBS	*79*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C2 PFHxDA	*43*	*	*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
18O2 PFHxS	*81*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
13C4 PFOS	*76*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
d3-NMeFOSAA	*79*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
M2-6:2 FTS	*93*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*
M2-8:2 FTS	*86*		*50 - 150*	*07/31/19 06:00*	*08/01/19 11:04*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-52692-2	NOB_075	70	77	73	79	78	77	81	78
LCS 320-311450/2-A	Lab Control Sample	80	82	79	82	83	81	83	80
LCSD 320-311450/3-A	Lab Control Sample Dup	73	77	73	77	74	73	77	74
MB 320-311450/1-A	Method Blank	77	78	76	78	77	77	82	76

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-52692-2	NOB_075	70	71	79	43 *	81	76	79	93
LCS 320-311450/2-A	Lab Control Sample	79	73	86	42 *	83	80	79	94
LCSD 320-311450/3-A	Lab Control Sample Dup	70	65	78	45 *	76	72	77	88
MB 320-311450/1-A	Method Blank	72	66	82	37 *	80	74	86	93

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-52692-2	NOB_075	86
LCS 320-311450/2-A	Lab Control Sample	91
LCSD 320-311450/3-A	Lab Control Sample Dup	81
MB 320-311450/1-A	Method Blank	89

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-311450/1-A
Matrix: Water
Analysis Batch: 311783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311450

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.302	J	2.0	0.17	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		07/31/19 06:00	08/01/19 10:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		07/31/19 06:00	08/01/19 10:32	1
6:2 FTS	ND		10	2.0	ng/L		07/31/19 06:00	08/01/19 10:32	1
8:2 FTS	ND		2.0	0.38	ng/L		07/31/19 06:00	08/01/19 10:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		07/31/19 06:00	08/01/19 10:32	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*77*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C5 PFPeA	*78*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C2 PFHxA	*76*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C4 PFHpA	*78*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C4 PFOA	*77*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C5 PFNA	*77*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C2 PFDA	*82*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C2 PFUnA	*76*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C2 PFDoA	*72*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C2 PFTeDA	*66*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C3 PFBS	*82*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C2 PFHxDA	*37*	*	*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
18O2 PFHxS	*80*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
13C4 PFOS	*74*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
d3-NMeFOSAA	*86*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
M2-6:2 FTS	*93*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*
M2-8:2 FTS	*89*		*50 - 150*	*07/31/19 06:00*	*08/01/19 10:32*	*1*

Lab Sample ID: LCS 320-311450/2-A
Matrix: Water
Analysis Batch: 311783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311450

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.6		ng/L		106	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-311450/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 311783
Prep Batch: 311450

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.8		ng/L		95	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.5		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	41.3		ng/L		103	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.1		ng/L		100	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.1		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	36.3		ng/L		91	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.6		ng/L		99	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	41.2		ng/L		103	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.6		ng/L		94	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.6		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.8		ng/L		93	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L		105	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	35.9		ng/L		97	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	34.9		ng/L		90	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.3		ng/L		101	67 - 127
6:2 FTS	37.9	35.2		ng/L		93	66 - 126
8:2 FTS	38.3	37.7		ng/L		98	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.7		ng/L		102	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*80*		*50 - 150*
13C5 PFPeA	*82*		*50 - 150*
13C2 PFHxA	*79*		*50 - 150*
13C4 PFHpA	*82*		*50 - 150*
13C4 PFOA	*83*		*50 - 150*
13C5 PFNA	*81*		*50 - 150*
13C2 PFDA	*83*		*50 - 150*
13C2 PFUnA	*80*		*50 - 150*
13C2 PFDoA	*79*		*50 - 150*
13C2 PFTeDA	*73*		*50 - 150*
13C3 PFBS	*86*		*50 - 150*
13C2 PFHxDA	*42*	*	*50 - 150*
18O2 PFHxS	*83*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*79*		*50 - 150*
M2-6:2 FTS	*94*		*50 - 150*
M2-8:2 FTS	*91*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-311450/3-A
Matrix: Water
Analysis Batch: 311783

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 311450

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.8		ng/L		105	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)			40.0	38.4		ng/L		96	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	39.4		ng/L		99	66 - 126	5	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)			40.0	41.7		ng/L		104	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	41.8		ng/L		105	68 - 128	4	30
Perfluorodecanoic acid (PFDA)			40.0	38.2		ng/L		95	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	36.9		ng/L		92	60 - 120	2	30
Perfluorododecanoic acid (PFDoA)			40.0	40.9		ng/L		102	71 - 131	3	30
Perfluorotridecanoic acid (PFTriA)			40.0	39.9		ng/L		100	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	38.9		ng/L		97	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	34.5		ng/L		98	73 - 133	0	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.0		ng/L		91	63 - 123	3	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	1	30
Perfluorooctanesulfonic acid (PFOS)			37.1	34.7		ng/L		93	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	36.0		ng/L		93	68 - 128	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	1	30
6:2 FTS			37.9	33.5		ng/L		88	66 - 126	5	30
8:2 FTS			38.3	39.1		ng/L		102	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.8		ng/L		97	72 - 132	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*73*		*50 - 150*
13C5 PFPeA	*77*		*50 - 150*
13C2 PFHxA	*73*		*50 - 150*
13C4 PFHpA	*77*		*50 - 150*
13C4 PFOA	*74*		*50 - 150*
13C5 PFNA	*73*		*50 - 150*
13C2 PFDA	*77*		*50 - 150*
13C2 PFUnA	*74*		*50 - 150*
13C2 PFDoA	*70*		*50 - 150*
13C2 PFTeDA	*65*		*50 - 150*
13C3 PFBS	*78*		*50 - 150*
13C2 PFHxDA	*45*	*	*50 - 150*
18O2 PFHxS	*76*		*50 - 150*
13C4 PFOS	*72*		*50 - 150*
d3-NMeFOSAA	*77*		*50 - 150*
M2-6:2 FTS	*88*		*50 - 150*
M2-8:2 FTS	*81*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

LCMS

Prep Batch: 311450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52692-2	NOB_075	Total/NA	Water	3535	
MB 320-311450/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-311450/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-311450/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 311783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-52692-2	NOB_075	Total/NA	Water	EPA 537(Mod)	311450
MB 320-311450/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	311450
LCS 320-311450/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	311450
LCSD 320-311450/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	311450

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Client Sample ID: NOB_075

Date Collected: 07/18/19 15:15
Date Received: 07/26/19 09:00

Lab Sample ID: 320-52692-2

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			294.2 mL	10.0 mL	311450	07/31/19 06:00	MTN	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			311783	08/01/19 11:04	GMK	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-52692-2
Project/Site: DWGTF_Londonderry
SDG: 4 Morningside Drive - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-52692-2
SDG: 4 Morningside Drive - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-52692-2	NOB_075	Water	07/18/19 15:15	07/26/19 09:00	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: D. Bosl	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Oswaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (24 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_075	7-18-19	1515	G	DW	N	N	X	2	4 MORNINGSIDE DRIVE

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	7.19.19 9:30	NOBIS	[signature]	7/19/19 9:30	NHDES 5.4°
Relinquished by:	7/25 1320	NHDES	Received by: Shipping	7/25 1320	Shipping 2.8
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 7/26/19 900	Company ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 997621
Cooler Temperature(s) °C and Other Remarks: 0.6

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-52692-2
SDG Number: 4 Morningside Drive - Londonderry, NH

Login Number: 52692
List Number: 1
Creator: Thompson, Sarah W

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	997621
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190724178

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

24 July 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119072151.01	Londonderry WQ Eval., Londonderry, NH #95160.00:	**NOB_075**	Drinking Water	18-Jul-19 15:15	18-Jul-19 17:29

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 24-Jul-19 19:12

REPORT OF ANALYSIS

sampled Date: 18-Jul-2019 03:15

119072151.01

Londonderry WQ Eval.,
Londonderry, NH #95160.00

NOB_075

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	4.0	1	mg/L	07/19/2019 15:48	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	07/18/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	07/20/2019 05:11	EPA 200.8	RT
Barium	0.015	0.01	mg/L	07/22/2019 15:42	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	07/22/2019 15:42	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	07/22/2019 15:42	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	07/20/2019 05:11	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	07/22/2019 15:42	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	07/22/2019 15:42	EPA 200.8	RT
Silver	<0.01	0.01	mg/L	07/23/2019 15:06	EPA 200.8	RT

AQUARIAN ANALYTICAL LLC

11907-2151

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

RP190724178

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: LONDONDERRY WQ EVAL.
Town/Site: LONDONDERRY, NH
Sampler: D. BUSH
Company: NOBIS GROUP
Bid Reference:

Project Manager: MARK HENDERSON
Report To: "
Invoice To: ACCOUNTS PAYABLE
Phone: 603-224-4182
E-mail: MHENDERSON@NOBIS-GROUP.COM

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0 Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
NOB_075	7-18-19/1515	DW	1														X				X								

Date Rec'd: 7/18/19 Time Rec'd: 1547 Temp Rec'd: 11.4
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MiN 40ml HCL LC OTHER

Relinquished by:	Date/Time:	Received by:
[signature]	7/18/19 1547	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers?: Yes / No
Containers Intact/Properly Labeled?: Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 11.4

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes X No
EDD required? ____Yes X No
MCP Compliance required? ____Yes X No
Is this NH "Cold Fund" related? ____Yes X No
Does a price quote apply? X Yes ____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Friday, August 02, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19070387

Lab ID: 19070387
Date Received: 7/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19070387
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19070387
Date: 8/2/2019

Lab ID: 19070387

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19070387-001	EPA 524.2	NOB_075	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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Milford, NH 03055
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19070387
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: 4 Morningside Dr Londonderry NH

Analytical Results

Lab ID: 19070387
Date: 8/2/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19070387-001	NOB_075	7/18/2019 3:15:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		7/27/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		7/27/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		7/27/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			7/27/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		7/27/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 1 ug/L			7/27/2019	1	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		7/27/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		7/27/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19070387-001	NOB_075	7/18/2019 3:15:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		7/27/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		7/27/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Styrene	EPA 524.2	< 1 ug/L	100		7/27/2019	1	LauraB
Tert-Butylbenzene	EPA 524.2	< 2 ug/L			7/27/2019	2	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		7/27/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		7/27/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		7/27/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-7
Laboratory SDG: 11 Ross Dr. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:24:41 AM

Orlette Johnson, Senior Project Manager
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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: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-7

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-7

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Client Sample ID: TNK_DW-4

Lab Sample ID: 320-50330-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.0	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.8		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.1		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1	B	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	8.2		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.37	J	1.9	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.6	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.8	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	2.5	J B	9.4	1.9	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Client Sample ID: TNK_DW-4

Date Collected: 05/09/19 11:45
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-7

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.0**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluoropentanoic acid (PFPeA)	**2.8**		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorohexanoic acid (PFHxA)	**4.1**		1.9	0.55	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluoroheptanoic acid (PFHpA)	**2.1**	**B**	1.9	0.24	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorooctanoic acid (PFOA)	**8.2**		1.9	0.80	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorononanoic acid (PFNA)	**0.37**	**J**	1.9	0.25	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorobutanesulfonic acid (PFBS)	**2.6**	**B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**	**J B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorooctanesulfonic acid (PFOS)	**2.8**	**I**	1.9	0.51	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 22:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		05/22/19 09:19	05/27/19 22:34	1
6:2 FTS	**2.5**	**J B**	9.4	1.9	ng/L		05/22/19 09:19	05/27/19 22:34	1
8:2 FTS	ND		1.9	0.35	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/22/19 09:19	05/27/19 22:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C5 PFPeA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C2 PFHxA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C4 PFHpA	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C5 PFNA	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C2 PFDA	*98*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C2 PFUnA	*101*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C2 PFDoA	*97*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C2 PFTeDA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C3 PFBS	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C2 PFHxDA	*72*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
13C4 PFOS	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
d3-NMeFOSAA	*83*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
M2-6:2 FTS	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*
M2-8:2 FTS	*105*		*50 - 150*	*05/22/19 09:19*	*05/27/19 22:34*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-7	TNK_DW-4	86	95	86	93	96	91	98	101
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-7	TNK_DW-4	97	96	94	72	95	93	83	89
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-7	TNK_DW-4	105
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-7	TNK_DW-4	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-7	TNK_DW-4	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Client Sample ID: TNK_DW-4

Date Collected: 05/09/19 11:45
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-7

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			265.2 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 22:34	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-7
Project/Site: TrustFund_Londonderry
SDG: 11 Ross Dr. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-7
SDG: 11 Ross Dr. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-7	TNK_DW-4	Water	05/09/19 11:45	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 11 Wiest, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact: ☒ Yes Δ No
Custody Seal No.: 30612
Cooler Temperature(s) °C and Other Remarks: 1.0 AK-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-7
SDG Number: 11 Ross Dr. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

sampled Date: 09-May-2019 11:45

119051162.06

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00

Drinking Water, TNK_DW_4

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	2.3	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.003	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	0.013	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-007	TNK_DW_4	5/9/2019 11:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

317 Elm Street
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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-007	TNK_DW_4	5/9/2019 11:45:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	13 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50330-1
Laboratory SDG: 10 Spruce St. - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 7:14:57 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50330-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50330-1

Receipt
The samples were received on 5/15/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-296191.

Method Code:3535_PFC_Water

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Client Sample ID: MTBE_1120

Lab Sample ID: 320-50330-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.7	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.5		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.3		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.3	B	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	7.2		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.39	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.31	J B	1.9	0.28	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	14	B	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8	J B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.1		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	22	B	9.6	1.9	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Client Sample ID: MTBE_1120

Date Collected: 05/09/19 08:30
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-1

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.7**	**B**	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluoropentanoic acid (PFPeA)	**2.5**		1.9	0.47	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorohexanoic acid (PFHxA)	**4.3**		1.9	0.55	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluoroheptanoic acid (PFHpA)	**2.3**	**B**	1.9	0.24	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorooctanoic acid (PFOA)	**7.2**		1.9	0.81	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorononanoic acid (PFNA)	**0.39**	**J**	1.9	0.26	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorotetradecanoic acid (PFTeA)	**0.31**	**J B**	1.9	0.28	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorobutanesulfonic acid (PFBS)	**14**	**B**	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorohexanesulfonic acid (PFHxS)	**1.8**	**J B**	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorooctanesulfonic acid (PFOS)	**4.1**		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/22/19 09:19	05/27/19 21:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:30	1
6:2 FTS	**22**	**B**	9.6	1.9	ng/L		05/22/19 09:19	05/27/19 21:30	1
8:2 FTS	ND		1.9	0.36	ng/L		05/22/19 09:19	05/27/19 21:30	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/22/19 09:19	05/27/19 21:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C5 PFPeA	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C4 PFHpA	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C4 PFOA	*103*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C2 PFDA	*100*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C2 PFDoA	*98*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C2 PFTeDA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C3 PFBS	*94*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C2 PFHxDA	*74*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
18O2 PFHxS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
13C4 PFOS	*93*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
d3-NMeFOSAA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
M2-6:2 FTS	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*
M2-8:2 FTS	*102*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:30*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50330-1	MTBE_1120	86	93	89	93	103	96	100	99
LCS 320-296191/2-A	Lab Control Sample	86	88	94	95	96	96	101	99
LCSD 320-296191/3-A	Lab Control Sample Dup	94	97	94	95	102	98	99	103
MB 320-296191/1-A	Method Blank	86	96	89	90	96	96	95	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50330-1	MTBE_1120	98	96	94	74	88	93	89	89
LCS 320-296191/2-A	Lab Control Sample	100	101	93	64	90	89	87	84
LCSD 320-296191/3-A	Lab Control Sample Dup	105	97	101	59	93	97	95	82
MB 320-296191/1-A	Method Blank	95	82	88	51	87	91	78	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50330-1	MTBE_1120	102
LCS 320-296191/2-A	Lab Control Sample	107
LCSD 320-296191/3-A	Lab Control Sample Dup	93
MB 320-296191/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-296191/1-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.485	J	2.0	0.35	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	1
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	1
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFPeA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxA	*89*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFHpA	*90*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C5 PFNA	*96*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFUnA	*99*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C3 PFBS	*88*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
18O2 PFHxS	*87*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
d3-NMeFOSAA	*78*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-6:2 FTS	*79*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*05/22/19 09:19*	*05/27/19 21:06*	*1*

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-296191/2-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.4		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.0		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.7		ng/L		92	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.1		ng/L		102	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.4		ng/L		114	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	40.1		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.4		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.0		ng/L		108	67 - 127
6:2 FTS	37.9	40.1		ng/L		106	66 - 126
8:2 FTS	38.3	36.2		ng/L		94	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.7		ng/L		99	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*96*		*50 - 150*
13C5 PFNA	*96*		*50 - 150*
13C2 PFDA	*101*		*50 - 150*
13C2 PFUnA	*99*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*64*		*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*89*		*50 - 150*
d3-NMeFOSAA	*87*		*50 - 150*
M2-6:2 FTS	*84*		*50 - 150*
M2-8:2 FTS	*107*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-296191/3-A
Matrix: Water
Analysis Batch: 297184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	43.0		ng/L		107	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)			40.0	36.9		ng/L		92	66 - 126	4	30
Perfluorohexanoic acid (PFHxA)			40.0	39.2		ng/L		98	66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.7		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)			40.0	38.9		ng/L		97	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.3		ng/L		103	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	39.9		ng/L		100	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)			40.0	40.4		ng/L		101	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	41.1		ng/L		103	72 - 132	9	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.6		ng/L		89	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.5		ng/L		103	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.6		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.9		ng/L		105	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.3		ng/L		101	67 - 127	7	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.7		ng/L		103	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	8	30
6:2 FTS			37.9	47.7		ng/L		126	66 - 126	17	30
8:2 FTS			38.3	37.6		ng/L		98	67 - 127	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.4		ng/L		96	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*50 - 150*
13C5 PFPeA	*97*		*50 - 150*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*95*		*50 - 150*
13C4 PFOA	*102*		*50 - 150*
13C5 PFNA	*98*		*50 - 150*
13C2 PFDA	*99*		*50 - 150*
13C2 PFUnA	*103*		*50 - 150*
13C2 PFDoA	*105*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*101*		*50 - 150*
13C2 PFHxDA	*59*		*50 - 150*
18O2 PFHxS	*93*		*50 - 150*
13C4 PFOS	*97*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
M2-6:2 FTS	*82*		*50 - 150*
M2-8:2 FTS	*93*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-1	MTBE_1120	Total/NA	Water	3535	
MB 320-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50330-1	MTBE_1120	Total/NA	Water	EPA 537(Mod)	296191
MB 320-296191/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	296191
LCS 320-296191/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	296191
LCSD 320-296191/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	296191

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Client Sample ID: MTBE_1120

Date Collected: 05/09/19 08:30
Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-1

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			261.4 mL	10.00 mL	296191	05/22/19 09:19	SK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297184	05/27/19 21:30	P1N	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50330-1
Project/Site: TrustFund_Londonderry
SDG: 10 Spruce St. - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50330-1
SDG: 10 Spruce St. - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50330-1	MTBE_1120	Water	05/09/19 08:30	05/15/19 09:30	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

4604 5366 1238

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904 ✓			
Project Name: TrustFund_Londonderry ✓	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (37 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE-1120	5/9/19	0830	G	DW	N		X		
Field ~~Duplicate~~ Blank	5/9/19	0855	G	DW	N		X		
NOB-044, 15 Tyler RD, Londonderry, NH	5/9/19	0925	G	DW	N		X		
MTBE-1123	5/9/19	1015	G	DW	N		X		
MTBE-1115	5/9/19	1035	G	DW	N		X		
NOB-045, 25 Severance DR, Londonderry, NH	5/9/19	1115	G	DW	N		X		
TNK-DW-4	5/9/19	1145	G	DW	N		X		
NOB-046, 111 West, Londonderry, NH	5/9/19	1240	G	DW	N		X		
MTBE-1118	5/9/19	1345	G	DW	N		X		

320-50330 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/10/19 0815	Neb's	[signature] 5.4°C	5/9/2019 0919	NHDES 5.4
[signature]	5/14/19 1322	NHDES	Shipping Cooler 4.1°C	5/14/19 1322	NHDES
			Jaime Basas	5/15/19 930	ETALWR

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
☒ Yes Δ No	306012	1.0 AK-8

Ver: 08/04/2016

eurofins | Environment Testing TestAmerica

320-50330 Field Sheet

ento
otes

Job:

Tracking # 4604 53606 1238 SO / PO / FO / 2-Day / Ground / UPS / Courier / GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

Therm. ID: AK8 Corr. Factor: + .2

Ice ✓ Wet ✓ Gel Other

Cooler Custody Seal: 80612

Sample Custody Seal: —

Cooler ID: —

Temp Observed: 0.8 Corrected: 1.0

From: Temp Blank ☐ Sample ☒

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☒
Alkalinity has no headspace?	☐	☐	☒
CoC is complete w/o discrepancies?	☒	☐	☐
Samples received within holding time?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒
Cooler compromised/tampered with?	☐	☒	☐
Samples compromised/tampered with?	☐	☒	☐
Samples w/o discrepancies?	☒	☐	☐
Sample containers have legible labels?	☒	☐	☐
Containers are not broken or leaking?	☒	☐	☐
Sample date/times are provided.	☒	☐	☐
Appropriate containers are used?	☒	☐	☐
Sample bottles are completely filled?	☒	☐	☐
Zero headspace?*	☒	☐	☐
Multiphasic samples are not present?	☒	☐	☐
Sample temp OK?	☒	☐	☐
Sample out of temp?	☐	☒	☐

Initials: JR Date: 5/15/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-1
SDG Number: 10 Spruce St. - Londonderry, NH

Login Number: 50330
List Number: 1
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190517035

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

17 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119051162.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1120**	Drinking Water	09-May-19 08:30	09-May-19 13:45
119051162.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_044, Tyler Rd, Londonderry, NH**	Drinking Water	09-May-19 09:25	09-May-19 13:45
119051162.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1123**	Drinking Water	09-May-19 10:15	09-May-19 13:45
119051162.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1115**	Drinking Water	09-May-19 10:35	09-May-19 13:45
119051162.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH**	Drinking Water	09-May-19 11:15	09-May-19 13:45
119051162.06	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, TNK_DW_4**	Drinking Water	09-May-19 11:45	09-May-19 13:45
119051162.07	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, NOB_046, 111 West Road, Londonderry, NH**	Drinking Water	09-May-19 12:40	09-May-19 13:45
119051162.08	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1118**	Drinking Water	09-May-19 13:15	09-May-19 13:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 17-May-19 11:25

REPORT OF ANALYSIS

sampled Date: 09-May-2019 08:30

119051162.01

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00

Drinking Water, MTBE_1120

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.009	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Barium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Cadmium	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Chromium	<0.010	0.01	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Lead	<0.001	0.001	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Mercury	<0.0004	0.0004	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Selenium	<0.015	0.015	mg/L	05/16/2019 08:12	EPA 200.8	SUB2
Silver	<0.010	0.01	mg/L	05/16/2019 14:25	EPA 200.8	SUB2

RP190517035

Date Rec'd: 5/9/19 Time Rec'd: 1345 Temp Rec'd: 4.8
Rec'd by: Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC___MR 8 40ML___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL LABS - 1162 (1-8)

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: K. Karlsson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:___	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:___	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1___	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
MTBE-1120	5/9/19 0830	DW	1														X				X							1
NOB-044, 15TH FWD, Londonderry, NH	5/9/19 0925	DW	1														X				X							2
MTBE-1123	5/9/19 1015	DW	1														X				X							3
MTBE-1115	5/9/19 1035	DW	1														X				X							4
NOB-045, 255 Rockingham Rd, Londonderry, NH	5/9/19 1115	DW	1														X				X							5
TNK-DW-4	5/9/19 1145	DW	1														X				X							6
NOB-046, 111 Wesford, Londonderry, NH	5/9/19 1240	DW	1														X				X							7
MTBE-1118	5/9/19 1335	DW	1														X				X							8

Relinquished by:	Date/Time:	Received by:
[signature]	5/9/19 1345	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 4.8 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? _____Yes_____No
EDD required? _____Yes_____No
MCP Compliance required?_____Yes_____No
Is this NH "Odd Fund" related?_____Yes_____No
Does a price quote apply?_____Yes_____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 10, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry NH
Control #: 19050245

Lab ID: 19050245
Date Received: 5/14/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry NH

Lab ID: 19050245
Date: 6/10/2019

Lab ID: 19050245

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050245-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050245
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19050245
Date: 6/10/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-002	MTBE_1120	5/9/2019 8:30:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050245-002	MTBE_1120	5/9/2019 8:30:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/17/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/17/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/17/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/17/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

317 Elm Street
Milford, NH 03055

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Monday, May 20, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry
Control #: 19050127

Lab ID: 19050127
Date Received: 5/7/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry

Lab ID: 19050127
Date: 5/20/2019

Lab ID: 19050127

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050127-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 46 Otterson Rd Londonderry NH

Analytical Results

Lab ID: 19050127
Date: 5/21/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-002	NOB_039	5/2/2019 11:25:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/16/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB

317 Elm Street
Milford, NH 03055
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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-002	NOB_039	5/2/2019 11:25:00 AM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/16/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/16/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/16/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/16/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50156-2
Laboratory SDG: 46 Otterson Rd - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
5/30/2019 8:16:08 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50156-2

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50156-2

Receipt
The samples were received on 5/9/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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 sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_039 (320-50156-2).

Method Code: 3535 PFC
preparation batch 320-294903

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_039

Lab Sample ID: 320-50156-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.2	J B	2.0	0.35	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.37	J B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_039

Date Collected: 05/02/19 11:25
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-2

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.2**	**J B**	2.0	0.35	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.48	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.57	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.84	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorohexanesulfonic acid (PFHxS)	**0.37**	**J B**	2.0	0.17	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.53	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/16/19 09:47	05/26/19 22:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/16/19 09:47	05/26/19 22:31	1
6:2 FTS	ND		9.9	2.0	ng/L		05/16/19 09:47	05/26/19 22:31	1
8:2 FTS	ND		2.0	0.37	ng/L		05/16/19 09:47	05/26/19 22:31	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.88	ng/L		05/16/19 09:47	05/26/19 22:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C5 PFPeA	*93*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C2 PFHxA	*87*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C4 PFHpA	*93*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C4 PFOA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C5 PFNA	*94*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C2 PFDA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C2 PFUnA	*98*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C2 PFDoA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C2 PFTeDA	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C2 PFHxDA	*51*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
13C4 PFOS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
d3-NMeFOSAA	*89*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
M2-6:2 FTS	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*
M2-8:2 FTS	*109*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:31*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50156-2	NOB_039	88	93	87	93	91	94	95	98
LCS 320-294903/2-A	Lab Control Sample	85	92	89	87	94	93	93	96
LCSD 320-294903/3-A	Lab Control Sample Dup	88	93	91	91	97	97	98	101
MB 320-294903/1-A	Method Blank	91	100	91	97	96	101	105	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50156-2	NOB_039	95	95	92	51	89	95	89	91
LCS 320-294903/2-A	Lab Control Sample	100	92	93	55	89	94	91	83
LCSD 320-294903/3-A	Lab Control Sample Dup	98	101	98	55	91	98	101	93
MB 320-294903/1-A	Method Blank	105	101	100	55	95	95	97	96

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50156-2	NOB_039	109
LCS 320-294903/2-A	Lab Control Sample	101
LCSD 320-294903/3-A	Lab Control Sample Dup	105
MB 320-294903/1-A	Method Blank	115

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-294903/1-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.772	J	2.0	0.35	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.341	J	2.0	0.17	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/16/19 09:47	05/26/19 21:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/16/19 09:47	05/26/19 21:03	1
6:2 FTS	ND		10	2.0	ng/L		05/16/19 09:47	05/26/19 21:03	1
8:2 FTS	ND		2.0	0.38	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/16/19 09:47	05/26/19 21:03	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFPeA	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFHpA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFUnA	*103*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDoA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFTeDA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxDA	*55*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-6:2 FTS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-8:2 FTS	*115*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	36.3		ng/L		91	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	43.9		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.8		ng/L		102	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.6		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.9		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	45.6		ng/L		114	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	44.3		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.0		ng/L		110	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.1		ng/L		95	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.9		ng/L		104	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	67 - 127
6:2 FTS	37.9	41.5		ng/L		109	66 - 126
8:2 FTS	38.3	41.1		ng/L		107	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.3		ng/L		98	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*92*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*87*		*50 - 150*
13C4 PFOA	*94*		*50 - 150*
13C5 PFNA	*93*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*92*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*89*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*83*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-294903/3-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)			40.0	38.5		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.5		ng/L		99	66 - 126	11	30
Perfluorooctanoic acid (PFOA)			40.0	40.3		ng/L		101	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.7		ng/L		99	68 - 128	7	30
Perfluorodecanoic acid (PFDA)			40.0	38.4		ng/L		96	69 - 129	9	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	60 - 120	13	30
Perfluorododecanoic acid (PFDoA)			40.0	41.0		ng/L		102	71 - 131	8	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.5		ng/L		106	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.3		ng/L		88	68 - 128	8	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.7		ng/L		101	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.7		ng/L		95	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.1		ng/L		100	68 - 128	7	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.4		ng/L		98	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.0		ng/L		104	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	37.4		ng/L		93	67 - 127	12	30
6:2 FTS			37.9	36.5		ng/L		96	66 - 126	13	30
8:2 FTS			38.3	38.0		ng/L		99	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.2		ng/L		103	72 - 132	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*88*		*50 - 150*
13C5 PFPeA	*93*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*97*		*50 - 150*
13C2 PFDA	*98*		*50 - 150*
13C2 PFUnA	*101*		*50 - 150*
13C2 PFDoA	*98*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*98*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*98*		*50 - 150*
d3-NMeFOSAA	*101*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*105*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

LCMS

Prep Batch: 294903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-2	NOB_039	Total/NA	Water	3535	
MB 320-294903/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-2	NOB_039	Total/NA	Water	EPA 537(Mod)	294903
MB 320-294903/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	294903
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	294903
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	294903

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_039

Date Collected: 05/02/19 11:25
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-2

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			253.1 mL	10.00 mL	294903	05/16/19 09:47	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297148	05/26/19 22:31	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-2
Project/Site: TrustFund_Londonderry
SDG: 46 Otterson Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-2
SDG: 46 Otterson Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50156-2	NOB_039	Water	05/02/19 11:25	05/11/19 14:44	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kate Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
FIELD BLANK	5/2/19	0800	G	DW	N		X		
NOB-039, 460 Hesson Rd, Londonderry, NH	5/2/19	1125	G	DW	N		X		
NOB-040, 97 GILCREAST RD, LONDONDERRY, NH	5/2/19	1220	G	DW	N		X		
NOB-041, 19 ~~HOOD FIND~~ Pine Hollow DR, LONDONDERRY, NH	5/2/19	1250	G	DW	N		X		
NOB-042, 15 PARTRIDGE LN, LONDONDERRY, NH	5/2/19	1350	G	DW	N		X		
NOB-043, 21 LAWSON FARMER RD, LONDONDERRY, NH	5/2/19	1420	G	DW	N		X		
Use characters before first comma as station ID									

320-50156 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/3/19 0930	NOB3	NHDES Cold storage (5.1°C)	5/3/19 9:30	NHDES
[signature]	5/7/19 14:10	DES	Shipping cooler 2.9°	5/7/19 14:10	DES
			[signature]	5/9/19 900	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806016
Cooler Temperature(s) °C and Other Remarks: 1.6°C

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-2
SDG Number: 46 Otterson Rd - Londonderry, NH

Login Number: 50156
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190513098

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

13 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119050295.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_039, 46 Otterson, Londonderry, NH**	Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_040, 97 Gilcreast, Londonderry, NH**	Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_041, 19 Pine Hollow, Londonderry, NH**	Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_042, 15 Partridge Lane, Londonderry, NH**	Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_043, 24 Lawson Farm, Londonderry, NH**	Drinking Water	02-May-19 14:20	02-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 13-May-19 17:18

REPORT OF ANALYSIS

sampled Date: 02-May-2019 11:25

119050295.01

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00
NOB_039, 46 Otterson,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	4.0	1	mg/L	05/06/2019 11:26	SM 4500 NO3 D	SUB2

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/03/2019 16:20	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.004	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Lead	**0.030**	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	05/03/2019 15:23	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	05/03/2019 15:23	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT

Date Rec'd: 5/2/19 Time Rec'd: 1545 Temp Rec'd: 7.6
Rec'd by: Location:
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (NA)
Bottle: TC___ MINS 40ML ___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

1905-295 (1-5)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: Karl Karlsson
Company: Nobis - Group
Bid Reference: see attached

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved (see attached)	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
All samples taken 5/2 per K. Karlsson - see attached																	Total * RCRA 8												
NOB-039, 46 Otterson, Londonderry, NH	5/2/19 1125	DW	1														X				X								1
NOB-040, 97 Gilcreast, Londonderry, NH	5/2/19 1220	DW	1														X				X								2
NOB-041, 19 Pine Hollow, Londonderry, NH	5/2/19 1230	DW	1														X				X								3
NOB-042, 15 Partridge Lane, Londonderry, NH	5/2/19 1350	DW	1														X				X								4
NOB-043, 21 Lawson Farm, Londonderry, NH	5/2/19 1420	DW	1														X				X								5

Relinquished by:	Date/Time:	Received by:
[signature]	5/2/19 1545 * 5/2/19 aJW	[signature]
Relinquished by:	Date/Time: *see attached	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? (Yes) / No
Containers Intact/Properly Labeled? (Yes) / No
Were samples delivered on ice? (Yes) / No

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, May 20, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: TrustFund Londonderry
Project Location: Londonderry
Control #: 19050127

Lab ID: 19050127
Date Received: 5/7/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: Londonderry

Lab ID: 19050127
Date: 5/20/2019

Lab ID: 19050127

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050127-001	EPA 524.2	Trip Blank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050127
Project Number: TrustFund Londonderry
Project Name: MTBE_01
Project Location: 97 Gilcreast Rd Londonderry NH

Analytical Results

Lab ID: 19050127
Date: 5/21/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-003	NOB_040	5/2/2019 12:20:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/16/2019	2	LauraB
1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Hexanone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Acetone	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Benzene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Bromobenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromochloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Bromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrachloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050127-003	NOB_040	5/2/2019 12:20:00 PM	Drinking water

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Chloroform	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Chloromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Cis-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloromethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Diethyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Di-Isopropyl Ether	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Ethylbenzene	EPA 524.2	< 0.5 ug/L	700		5/16/2019	0.5	LauraB
Hexachlorobutadiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ketone (MEK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methyl isobutyl ketone (MIBK)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Methylene Chloride	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Naphthalene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Styrene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Tert-Butylbenzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofuran	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
Toluene	EPA 524.2	< 0.5 ug/L	1000		5/16/2019	0.5	LauraB
Total Xylenes	EPA 524.2	< 0.5 ug/L	10000		5/16/2019	0.5	LauraB
Trans-1,2-Dichloroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Trichloroethene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Trichlorofluoromethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Vinyl Chloride	EPA 524.2	< 0.5 ug/L	2		5/16/2019	0.5	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50156-3
Laboratory SDG: 97 Gilcreast Rd - Londonderry, NH
Client Project/Site: TrustFund_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
5/30/2019 8:17:37 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-3
Project/Site: TrustFund_Londonderry
SDG: 97 Gilcreast Rd - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50156-3

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50156-3

Receipt
The samples were received on 5/9/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537 (Mod), EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

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 sample was preserved in Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_040 (320-50156-3).

Method Code: 3535 PFC
preparation batch 320-294903

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

Client Sample ID: NOB_040

Lab Sample ID: 320-50156-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.6	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.1		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	8.7		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.6		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	15		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.47	J I	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.0		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	9.7	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	J I	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.8		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

Client Sample ID: NOB_040

Date Collected: 05/02/19 12:20
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-3

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.6**	**B**	1.9	0.33	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluoropentanoic acid (PFPeA)	**7.1**		1.9	0.47	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorohexanoic acid (PFHxA)	**8.7**		1.9	0.55	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluoroheptanoic acid (PFHpA)	**3.6**		1.9	0.24	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorooctanoic acid (PFOA)	**15**		1.9	0.81	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorononanoic acid (PFNA)	**0.47**	**J I**	1.9	0.26	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorobutanesulfonic acid (PFBS)	**6.0**		1.9	0.19	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorohexanesulfonic acid (PFHxS)	**9.7**	**B**	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.23**	**J I**	1.9	0.18	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorooctanesulfonic acid (PFOS)	**5.8**		1.9	0.52	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/16/19 09:47	05/26/19 22:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 22:39	1
6:2 FTS	ND		9.6	1.9	ng/L		05/16/19 09:47	05/26/19 22:39	1
8:2 FTS	ND		1.9	0.36	ng/L		05/16/19 09:47	05/26/19 22:39	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/16/19 09:47	05/26/19 22:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C5 PFPeA	*88*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C2 PFHxA	*81*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C4 PFHpA	*85*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C4 PFOA	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C5 PFNA	*93*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C2 PFDA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C2 PFUnA	*94*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C2 PFDoA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C2 PFTeDA	*89*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C3 PFBS	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C2 PFHxDA	*62*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
18O2 PFHxS	*89*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
13C4 PFOS	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
d3-NMeFOSAA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
M2-6:2 FTS	*92*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*
M2-8:2 FTS	*102*		*50 - 150*	*05/16/19 09:47*	*05/26/19 22:39*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50156-3	NOB_040	82	88	81	85	92	93	97	94
LCS 320-294903/2-A	Lab Control Sample	85	92	89	87	94	93	93	96
LCSD 320-294903/3-A	Lab Control Sample Dup	88	93	91	91	97	97	98	101
MB 320-294903/1-A	Method Blank	91	100	91	97	96	101	105	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50156-3	NOB_040	97	89	92	62	89	91	91	92
LCS 320-294903/2-A	Lab Control Sample	100	92	93	55	89	94	91	83
LCSD 320-294903/3-A	Lab Control Sample Dup	98	101	98	55	91	98	101	93
MB 320-294903/1-A	Method Blank	105	101	100	55	95	95	97	96

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50156-3	NOB_040	102
LCS 320-294903/2-A	Lab Control Sample	101
LCSD 320-294903/3-A	Lab Control Sample Dup	105
MB 320-294903/1-A	Method Blank	115

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-294903/1-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.772	J	2.0	0.35	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.341	J	2.0	0.17	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/16/19 09:47	05/26/19 21:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/16/19 09:47	05/26/19 21:03	1
6:2 FTS	ND		10	2.0	ng/L		05/16/19 09:47	05/26/19 21:03	1
8:2 FTS	ND		2.0	0.38	ng/L		05/16/19 09:47	05/26/19 21:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/16/19 09:47	05/26/19 21:03	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFPeA	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxA	*91*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFHpA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOA	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C5 PFNA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFUnA	*103*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFDoA	*105*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFTeDA	*101*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C3 PFBS	*100*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C2 PFHxDA	*55*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
18O2 PFHxS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
13C4 PFOS	*95*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-6:2 FTS	*96*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*
M2-8:2 FTS	*115*		*50 - 150*	*05/16/19 09:47*	*05/26/19 21:03*	*1*

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-294903/2-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	36.3		ng/L		91	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	43.9		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.8		ng/L		102	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.6		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.9		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	45.6		ng/L		114	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	44.3		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.0		ng/L		110	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.1		ng/L		95	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	36.9		ng/L		104	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.8		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	67 - 127
6:2 FTS	37.9	41.5		ng/L		109	66 - 126
8:2 FTS	38.3	41.1		ng/L		107	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.3		ng/L		98	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*92*		*50 - 150*
13C2 PFHxA	*89*		*50 - 150*
13C4 PFHpA	*87*		*50 - 150*
13C4 PFOA	*94*		*50 - 150*
13C5 PFNA	*93*		*50 - 150*
13C2 PFDA	*93*		*50 - 150*
13C2 PFUnA	*96*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*92*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*89*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*83*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-294903/3-A
Matrix: Water
Analysis Batch: 297148

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294903

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)			40.0	38.5		ng/L		96	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.5		ng/L		99	66 - 126	11	30
Perfluorooctanoic acid (PFOA)			40.0	40.3		ng/L		101	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	39.7		ng/L		99	68 - 128	7	30
Perfluorodecanoic acid (PFDA)			40.0	38.4		ng/L		96	69 - 129	9	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	60 - 120	13	30
Perfluorododecanoic acid (PFDoA)			40.0	41.0		ng/L		102	71 - 131	8	30
Perfluorotridecanoic acid (PFTriA)			40.0	42.5		ng/L		106	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	35.3		ng/L		88	68 - 128	8	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.7		ng/L		101	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.7		ng/L		95	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.1		ng/L		100	68 - 128	7	30
Perfluorooctanesulfonic acid (PFOS)			37.1	36.4		ng/L		98	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.0		ng/L		104	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	37.4		ng/L		93	67 - 127	12	30
6:2 FTS			37.9	36.5		ng/L		96	66 - 126	13	30
8:2 FTS			38.3	38.0		ng/L		99	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.2		ng/L		103	72 - 132	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*88*		*50 - 150*
13C5 PFPeA	*93*		*50 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*97*		*50 - 150*
13C2 PFDA	*98*		*50 - 150*
13C2 PFUnA	*101*		*50 - 150*
13C2 PFDoA	*98*		*50 - 150*
13C2 PFTeDA	*101*		*50 - 150*
13C3 PFBS	*98*		*50 - 150*
13C2 PFHxDA	*55*		*50 - 150*
18O2 PFHxS	*91*		*50 - 150*
13C4 PFOS	*98*		*50 - 150*
d3-NMeFOSAA	*101*		*50 - 150*
M2-6:2 FTS	*93*		*50 - 150*
M2-8:2 FTS	*105*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

LCMS

Prep Batch: 294903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-3	NOB_040	Total/NA	Water	3535	
MB 320-294903/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 297148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50156-3	NOB_040	Total/NA	Water	EPA 537(Mod)	294903
MB 320-294903/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	294903
LCS 320-294903/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	294903
LCSD 320-294903/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	294903

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

Client Sample ID: NOB_040

Date Collected: 05/02/19 12:20
Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-3

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			261.6 mL	10.00 mL	294903	05/16/19 09:47	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			297148	05/26/19 22:39	S1M	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Job ID: 320-50156-3
Project/Site: TrustFund_Londonderry
SDG: 97 Gilcreast Rd - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: TrustFund_Londonderry

Job ID: 320-50156-3
SDG: 97 Gilcreast Rd - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50156-3	NOB_040	Water	05/02/19 12:20	05/11/19 14:44	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Kate Karlsson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
FIELD BLANK	5/2/19	0800	G	DW	N		X		
NOB-039, 460 Hesson Rd, Londonderry, NH	5/2/19	1125	G	DW	N		X		
NOB-040, 97 GILCREAST RD, LONDONDERRY, NH	5/2/19	1220	G	DW	N		X		
NOB-041, 19 ~~HOOD FIND~~ Pine Hollow DR, LONDONDERRY, NH	5/2/19	1250	G	DW	N		X		
NOB-042, 15 PARTRIDGE LN, LONDONDERRY, NH	5/2/19	1350	G	DW	N		X		
NOB-043, 21 LAWSON FARMER RD, LONDONDERRY, NH	5/2/19	1420	G	DW	N		X		
Use characters before first comma as station ID									

320-50156 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/3/19 0930	NOB3	NHDES Cold storage (5.1°C)	5/3/19 9:30	NHDES
[signature]	5/7/19 14:10	DES	Shipping cooler 2.9°	5/7/19 14:10	DES
			[signature]	5/9/19 900	ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 806016
Cooler Temperature(s) °C and Other Remarks: 1.6°C

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-3
SDG Number: 97 Gilcreast Rd - Londonderry, NH

Login Number: 50156
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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?	False	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

RP190513098

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

13 May 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119050295.01	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_039, 46 Otterson, Londonderry, NH**	Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_040, 97 Gilcreast, Londonderry, NH**	Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_041, 19 Pine Hollow, Londonderry, NH**	Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_042, 15 Partridge Lane, Londonderry, NH**	Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:	**NOB_043, 24 Lawson Farm, Londonderry, NH**	Drinking Water	02-May-19 14:20	02-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 13-May-19 17:18

REPORT OF ANALYSIS

sampled Date: 02-May-2019 12:20

119050295.02

Londonderry GW Quality Eval,
Londonderry, NH, #95160.00
NOB_040, 97 Gilcreast,
Londonderry, NH

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/06/2019 11:26	SM 4500 NO3 D	SUB2

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/03/2019 16:20	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.007	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Barium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	05/03/2019 15:23	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	05/03/2019 15:23	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	05/03/2019 15:23	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	05/03/2019 15:23	EPA 200.8	RT

Date Rec'd: 5/2/19 Time Rec'd: 1545 Temp Rec'd: 7.6
Rec'd by: Location:
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (NA)
Bottle: TC___ MINS 40ML ___HCL___LC___OTHER_____

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

1905-295 (1-5)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements (check one)

Rush Samples Need Prior Approval

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Eval
Town/Site: Londonderry
Sampler: Karl Karlsson
Company: Nobis - Group
Bid Reference: see attached

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved (see attached)	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Aquarian ID
All samples taken 5/2 per K. Karlsson - see attached																	Total * RCRA 8												
NOB-039, 46 Otterson, Londonderry, NH	5/2/19 1125	DW	1														X				X								1
NOB-040, 97 Gilcreast, Londonderry, NH	5/2/19 1220	DW	1														X				X								2
NOB-041, 19 Pine Hollow, Londonderry, NH	5/2/19 1230	DW	1														X				X								3
NOB-042, 15 Partridge Lane, Londonderry, NH	5/2/19 1350	DW	1														X				X								4
NOB-043, 21 Lawson Farm, Londonderry, NH	5/2/19 1420	DW	1														X				X								5

Relinquished by:	Date/Time:	Received by:
[signature]	5/2/19 1545 * 5/2/19 aJW	[signature]
Relinquished by:	Date/Time: *see attached	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? (Yes) / No
Containers Intact/Properly Labeled? (Yes) / No
Were samples delivered on ice? (Yes) / No

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-3
Laboratory Sample Delivery Group: SW-1 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:29:31 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-3

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-3

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_052 (320-50812-3) and (LCSD 320-298925/3-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298925.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample is yellow with particulates at the bottom of the bottle prior to extraction: NOB_052 (320-50812-3).

They were also yellow after extraction.

320-298925
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Client Sample ID: NOB_052

Lab Sample ID: 320-50812-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.3	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.7		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.3		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.3		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.83	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.32	J I	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.1	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Client Sample ID: NOB_052

Date Collected: 05/21/19 10:40
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-3

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.3**	**B**	1.9	0.33	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluoropentanoic acid (PFPeA)	**3.7**		1.9	0.47	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorohexanoic acid (PFHxA)	**4.3**		1.9	0.55	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluoroheptanoic acid (PFHpA)	**3.3**		1.9	0.24	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorooctanoic acid (PFOA)	**12**		1.9	0.81	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorononanoic acid (PFNA)	**0.83**	**J**	1.9	0.26	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorodecanoic acid (PFDA)	**0.32**	**J I**	1.9	0.30	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorobutanesulfonic acid (PFBS)	**2.8**		1.9	0.19	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorohexanesulfonic acid (PFHxS)	**2.0**	**B**	1.9	0.16	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorooctanesulfonic acid (PFOS)	**4.1**	**I**	1.9	0.51	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/04/19 06:51	06/05/19 05:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:20	1
6:2 FTS	ND		9.5	1.9	ng/L		06/04/19 06:51	06/05/19 05:20	1
8:2 FTS	ND		1.9	0.36	ng/L		06/04/19 06:51	06/05/19 05:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/04/19 06:51	06/05/19 05:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C5 PFPeA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C2 PFHxA	*91*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C4 PFOA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C2 PFDoA	*95*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C2 PFTeDA	*67*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C3 PFBS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C2 PFHxDA	*27*	*	*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
13C4 PFOS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
M2-6:2 FTS	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:20*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-3	NOB_052	57	89	91	93	94	96	97	96
LCS 320-298925/2-A	Lab Control Sample	85	96	92	91	92	87	88	92
LCSD 320-298925/3-A	Lab Control Sample Dup	81	88	85	88	87	83	88	86
MB 320-298925/1-A	Method Blank	89	98	94	100	96	96	101	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-3	NOB_052	95	67	86	27 *	88	88	95	101
LCS 320-298925/2-A	Lab Control Sample	86	79	87	53	85	80	91	96
LCSD 320-298925/3-A	Lab Control Sample Dup	85	71	81	44 *	84	76	84	96
MB 320-298925/1-A	Method Blank	93	82	89	57	88	86	93	104

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-3	NOB_052	97
LCS 320-298925/2-A	Lab Control Sample	89
LCSD 320-298925/3-A	Lab Control Sample Dup	80
MB 320-298925/1-A	Method Blank	100

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298925/1-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.353	J	2.0	0.35	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.323	J	2.0	0.17	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:51	06/05/19 04:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:51	06/05/19 04:56	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:51	06/05/19 04:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:51	06/05/19 04:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFPeA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.1		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.1		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.1		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	33.3		ng/L		83	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.7		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.5		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2		ng/L		85	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.8		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.6		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	67 - 127
6:2 FTS	37.9	39.4		ng/L		104	66 - 126
8:2 FTS	38.3	39.6		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*96*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*92*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*86*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*53*		*50 - 150*
18O2 PFHxS	*85*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298925/3-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.5		ng/L		101	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	36.9		ng/L		92	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		97	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	40.7		ng/L		102	68 - 128	4	30
Perfluorodecanoic acid (PFDA)			40.0	37.6		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.3		ng/L		88	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)			40.0	37.2		ng/L		93	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	36.0		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.1		ng/L		90	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.2		ng/L		102	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.1		ng/L		91	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	36.3		ng/L		96	66 - 126	8	30
8:2 FTS			38.3	39.1		ng/L		102	67 - 127	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.1		ng/L		100	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*81*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*87*		*50 - 150*
13C5 PFNA	*83*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*86*		*50 - 150*
13C2 PFDoA	*85*		*50 - 150*
13C2 PFTeDA	*71*		*50 - 150*
13C3 PFBS	*81*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*76*		*50 - 150*
d3-NMeFOSAA	*84*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*80*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

LCMS

Prep Batch: 298925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-3	NOB_052	Total/NA	Water	3535	
MB 320-298925/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-3	NOB_052	Total/NA	Water	EPA 537(Mod)	298925
MB 320-298925/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298925
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298925
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298925

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Client Sample ID: NOB_052

Date Collected: 05/21/19 10:40
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-3

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			262.3 mL	10.0 mL	298925	06/04/19 06:51	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299173	06/05/19 05:20	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-3
SDG: SW-1 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-3	NOB_052	Water	05/21/19 10:40	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-3
SDG Number: SW-1 - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 10:40

119052561.03

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
Surface Water, NOB_052

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.012	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.52	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: SW-1

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-004	NOB_052	5/21/2019 10:40:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		5/31/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		5/31/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		5/31/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		5/31/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB

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Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-004	NOB_052	5/21/2019 10:40:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB

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Milford, NH 03055
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-4
Laboratory Sample Delivery Group: SW-2 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:30:55 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
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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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-4

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-4

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_053 (320-50812-4) and (LCSD 320-298925/3-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298925.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample is yellow with particulates at the bottom of the bottle prior to extraction: NOB_053 (320-50812-4).

They were also yellow after extraction.

320-298925
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Client Sample ID: NOB_053

Lab Sample ID: 320-50812-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.5	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.2		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	8.0		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.4		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	20		1.9	0.80	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.1	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.4		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.0	I	1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Client Sample ID: NOB_053

Date Collected: 05/21/19 11:00
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-4

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.5**	**B**	1.9	0.33	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluoropentanoic acid (PFPeA)	**7.2**		1.9	0.46	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorohexanoic acid (PFHxA)	**8.0**		1.9	0.55	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluoroheptanoic acid (PFHpA)	**5.4**		1.9	0.24	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorooctanoic acid (PFOA)	**20**		1.9	0.80	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorononanoic acid (PFNA)	**1.1**	**J**	1.9	0.26	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorobutanesulfonic acid (PFBS)	**3.4**		1.9	0.19	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**	**B**	1.9	0.16	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorooctanesulfonic acid (PFOS)	**5.0**	**I**	1.9	0.51	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/04/19 06:51	06/05/19 05:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:28	1
6:2 FTS	ND		9.5	1.9	ng/L		06/04/19 06:51	06/05/19 05:28	1
8:2 FTS	ND		1.9	0.35	ng/L		06/04/19 06:51	06/05/19 05:28	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		06/04/19 06:51	06/05/19 05:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*58*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C5 PFPeA	*92*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C2 PFHxA	*91*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C4 PFOA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C5 PFNA	*92*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C2 PFDoA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C2 PFTeDA	*71*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C2 PFHxDA	*31*	*	*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
18O2 PFHxS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
d3-NMeFOSAA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
M2-6:2 FTS	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*
M2-8:2 FTS	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:28*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-4	NOB_053	58	92	91	97	93	92	94	96
LCS 320-298925/2-A	Lab Control Sample	85	96	92	91	92	87	88	92
LCSD 320-298925/3-A	Lab Control Sample Dup	81	88	85	88	87	83	88	86
MB 320-298925/1-A	Method Blank	89	98	94	100	96	96	101	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-4	NOB_053	94	71	89	31 *	89	91	94	101
LCS 320-298925/2-A	Lab Control Sample	86	79	87	53	85	80	91	96
LCSD 320-298925/3-A	Lab Control Sample Dup	85	71	81	44 *	84	76	84	96
MB 320-298925/1-A	Method Blank	93	82	89	57	88	86	93	104

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-4	NOB_053	94
LCS 320-298925/2-A	Lab Control Sample	89
LCSD 320-298925/3-A	Lab Control Sample Dup	80
MB 320-298925/1-A	Method Blank	100

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298925/1-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.353	J	2.0	0.35	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.323	J	2.0	0.17	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:51	06/05/19 04:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:51	06/05/19 04:56	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:51	06/05/19 04:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:51	06/05/19 04:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFPeA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.1		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.1		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.1		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	33.3		ng/L		83	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.7		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.5		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2		ng/L		85	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.8		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.6		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	67 - 127
6:2 FTS	37.9	39.4		ng/L		104	66 - 126
8:2 FTS	38.3	39.6		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*96*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*92*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*86*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*53*		*50 - 150*
18O2 PFHxS	*85*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298925/3-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.5		ng/L		101	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	36.9		ng/L		92	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		97	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	40.7		ng/L		102	68 - 128	4	30
Perfluorodecanoic acid (PFDA)			40.0	37.6		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.3		ng/L		88	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)			40.0	37.2		ng/L		93	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	36.0		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.1		ng/L		90	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.2		ng/L		102	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.1		ng/L		91	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	36.3		ng/L		96	66 - 126	8	30
8:2 FTS			38.3	39.1		ng/L		102	67 - 127	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.1		ng/L		100	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*81*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*87*		*50 - 150*
13C5 PFNA	*83*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*86*		*50 - 150*
13C2 PFDoA	*85*		*50 - 150*
13C2 PFTeDA	*71*		*50 - 150*
13C3 PFBS	*81*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*76*		*50 - 150*
d3-NMeFOSAA	*84*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*80*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

LCMS

Prep Batch: 298925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-4	NOB_053	Total/NA	Water	3535	
MB 320-298925/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-4	NOB_053	Total/NA	Water	EPA 537(Mod)	298925
MB 320-298925/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298925
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298925
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298925

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Client Sample ID: NOB_053

Date Collected: 05/21/19 11:00
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-4

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			264.2 mL	10.0 mL	298925	06/04/19 06:51	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299173	06/05/19 05:28	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-4
SDG: SW-2 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-4	NOB_053	Water	05/21/19 11:00	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-4
SDG Number: SW-2 - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 11:00

119052561.04

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
Surface Water, NOB_053

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.018	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.25	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: SW-2

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-005	NOB_053	5/21/2019 11:00:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		5/31/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		5/31/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		5/31/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		5/31/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-005	NOB_053	5/21/2019 11:00:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-5
Laboratory Sample Delivery Group: SW-3 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:32:25 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-5

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-5

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

Receipt Exceptions
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): NOB_054 (320-50812-5). The sample was logged according to the information on the COC.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_054 (320-50812-5) and (LCSD 320-298925/3-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298925.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample is yellow with particulates at the bottom of the bottle prior to extraction: NOB_054 (320-50812-5).

They were also yellow after extraction.

320-298925
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Client Sample ID: NOB_054

Lab Sample ID: 320-50812-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.7	B	1.8	0.32	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.2		1.8	0.45	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.5		1.8	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.8		1.8	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	11		1.8	0.79	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.0	J	1.8	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.32	J	1.8	0.29	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.2		1.8	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7	B	1.8	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.5		1.8	0.50	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Client Sample ID: NOB_054

Date Collected: 05/21/19 11:15
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-5

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.7**	**B**	1.8	0.32	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluoropentanoic acid (PFPeA)	**4.2**		1.8	0.45	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorohexanoic acid (PFHxA)	**4.5**		1.8	0.54	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluoroheptanoic acid (PFHpA)	**2.8**		1.8	0.23	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorooctanoic acid (PFOA)	**11**		1.8	0.79	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorononanoic acid (PFNA)	**1.0**	**J**	1.8	0.25	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorodecanoic acid (PFDA)	**0.32**	**J**	1.8	0.29	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluoroundecanoic acid (PFUnA)	ND	I	1.8	1.0	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.27	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorobutanesulfonic acid (PFBS)	**3.2**		1.8	0.18	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**	**B**	1.8	0.16	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND	I	1.8	0.18	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorooctanesulfonic acid (PFOS)	**5.5**		1.8	0.50	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.30	ng/L		06/04/19 06:51	06/05/19 05:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		06/04/19 06:51	06/05/19 05:36	1
6:2 FTS	ND		9.2	1.8	ng/L		06/04/19 06:51	06/05/19 05:36	1
8:2 FTS	ND		1.8	0.35	ng/L		06/04/19 06:51	06/05/19 05:36	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.82	ng/L		06/04/19 06:51	06/05/19 05:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*59*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C2 PFHxA	*92*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C5 PFNA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C2 PFUnA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C2 PFDoA	*90*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C2 PFTeDA	*76*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C2 PFHxDA	*41*	*	*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
18O2 PFHxS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
13C4 PFOS	*87*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
d3-NMeFOSAA	*99*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:36*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-5	NOB_054	59	91	92	96	91	93	95	94
LCS 320-298925/2-A	Lab Control Sample	85	96	92	91	92	87	88	92
LCSD 320-298925/3-A	Lab Control Sample Dup	81	88	85	88	87	83	88	86
MB 320-298925/1-A	Method Blank	89	98	94	100	96	96	101	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-5	NOB_054	90	76	89	41 *	89	87	99	104
LCS 320-298925/2-A	Lab Control Sample	86	79	87	53	85	80	91	96
LCSD 320-298925/3-A	Lab Control Sample Dup	85	71	81	44 *	84	76	84	96
MB 320-298925/1-A	Method Blank	93	82	89	57	88	86	93	104

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-5	NOB_054	97
LCS 320-298925/2-A	Lab Control Sample	89
LCSD 320-298925/3-A	Lab Control Sample Dup	80
MB 320-298925/1-A	Method Blank	100

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298925/1-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.353	J	2.0	0.35	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.323	J	2.0	0.17	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:51	06/05/19 04:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:51	06/05/19 04:56	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:51	06/05/19 04:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:51	06/05/19 04:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFPeA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.1		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.1		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.1		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	33.3		ng/L		83	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.7		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.5		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2		ng/L		85	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.8		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.6		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	67 - 127
6:2 FTS	37.9	39.4		ng/L		104	66 - 126
8:2 FTS	38.3	39.6		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*96*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*92*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*86*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*53*		*50 - 150*
18O2 PFHxS	*85*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298925/3-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.5		ng/L		101	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	36.9		ng/L		92	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		97	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	40.7		ng/L		102	68 - 128	4	30
Perfluorodecanoic acid (PFDA)			40.0	37.6		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.3		ng/L		88	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)			40.0	37.2		ng/L		93	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	36.0		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.1		ng/L		90	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.2		ng/L		102	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.1		ng/L		91	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	36.3		ng/L		96	66 - 126	8	30
8:2 FTS			38.3	39.1		ng/L		102	67 - 127	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.1		ng/L		100	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*81*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*87*		*50 - 150*
13C5 PFNA	*83*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*86*		*50 - 150*
13C2 PFDoA	*85*		*50 - 150*
13C2 PFTeDA	*71*		*50 - 150*
13C3 PFBS	*81*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*76*		*50 - 150*
d3-NMeFOSAA	*84*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*80*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

LCMS

Prep Batch: 298925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-5	NOB_054	Total/NA	Water	3535	
MB 320-298925/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-5	NOB_054	Total/NA	Water	EPA 537(Mod)	298925
MB 320-298925/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298925
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298925
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298925

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Client Sample ID: NOB_054

Date Collected: 05/21/19 11:15
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-5

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			270.6 mL	10.0 mL	298925	06/04/19 06:51	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299173	06/05/19 05:36	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-5
SDG: SW-3 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-5	NOB_054	Water	05/21/19 11:15	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-5
SDG Number: SW-3 - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 11:15

119052561.05

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
Surface Water, NOB_054

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.024	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.23	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: SW-3

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-006	NOB_054	5/21/2019 11:15:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		5/31/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		5/31/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		5/31/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		5/31/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB

317 Elm Street
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(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-006	NOB_054	5/21/2019 11:15:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB

317 Elm Street
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-6
Laboratory Sample Delivery Group: SW-4- Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:33:29 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-6

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-6

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

Receipt Exceptions
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): NOB_055 (320-50812-6). The container for NOB_055 (320-50812-6) had no sample time and date listed. The sample was logged according to the information on the COC.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_055 (320-50812-6) and (LCSD 320-298925/3-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298925.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample is yellow with particulates at the bottom of the bottle prior to extraction: NOB_055 (320-50812-6).

They were also yellow after extraction.

320-298925
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Client Sample ID: NOB_055

Lab Sample ID: 320-50812-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.2	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.9		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.5		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.7		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	9.8		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.82	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.35	J	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.1		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.6		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Client Sample ID: NOB_055

Date Collected: 05/21/19 11:50
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-6

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.2**	**B**	1.9	0.33	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluoropentanoic acid (PFPeA)	**3.9**		1.9	0.47	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorohexanoic acid (PFHxA)	**4.5**		1.9	0.55	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluoroheptanoic acid (PFHpA)	**2.7**		1.9	0.24	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorooctanoic acid (PFOA)	**9.8**		1.9	0.81	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorononanoic acid (PFNA)	**0.82**	**J**	1.9	0.26	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorodecanoic acid (PFDA)	**0.35**	**J**	1.9	0.30	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorobutanesulfonic acid (PFBS)	**3.1**		1.9	0.19	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorohexanesulfonic acid (PFHxS)	**2.6**	**B**	1.9	0.16	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorooctanesulfonic acid (PFOS)	**4.6**		1.9	0.52	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/04/19 06:51	06/05/19 05:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:44	1
6:2 FTS	ND		9.5	1.9	ng/L		06/04/19 06:51	06/05/19 05:44	1
8:2 FTS	ND		1.9	0.36	ng/L		06/04/19 06:51	06/05/19 05:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/04/19 06:51	06/05/19 05:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*64*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C5 PFPeA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C2 PFHxA	*92*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C4 PFOA	*95*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C5 PFNA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C2 PFDA	*99*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C2 PFUnA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C2 PFTeDA	*68*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C2 PFHxDA	*34*	*	*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
18O2 PFHxS	*91*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
d3-NMeFOSAA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*
M2-8:2 FTS	*97*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:44*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-6	NOB_055	64	93	92	95	95	93	99	98
LCS 320-298925/2-A	Lab Control Sample	85	96	92	91	92	87	88	92
LCSD 320-298925/3-A	Lab Control Sample Dup	81	88	85	88	87	83	88	86
MB 320-298925/1-A	Method Blank	89	98	94	100	96	96	101	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-6	NOB_055	93	68	88	34 *	91	86	94	104
LCS 320-298925/2-A	Lab Control Sample	86	79	87	53	85	80	91	96
LCSD 320-298925/3-A	Lab Control Sample Dup	85	71	81	44 *	84	76	84	96
MB 320-298925/1-A	Method Blank	93	82	89	57	88	86	93	104

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-6	NOB_055	97
LCS 320-298925/2-A	Lab Control Sample	89
LCSD 320-298925/3-A	Lab Control Sample Dup	80
MB 320-298925/1-A	Method Blank	100

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298925/1-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.353	J	2.0	0.35	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.323	J	2.0	0.17	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:51	06/05/19 04:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:51	06/05/19 04:56	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:51	06/05/19 04:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:51	06/05/19 04:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFPeA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.1		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.1		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.1		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	33.3		ng/L		83	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.7		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.5		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2		ng/L		85	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.8		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.6		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	67 - 127
6:2 FTS	37.9	39.4		ng/L		104	66 - 126
8:2 FTS	38.3	39.6		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*96*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*92*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*86*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*53*		*50 - 150*
18O2 PFHxS	*85*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298925/3-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	40.5		ng/L		101	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	40.0	37.5		ng/L		94	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)	40.0	36.9		ng/L		92	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)	40.0	39.0		ng/L		97	64 - 124	5	30
Perfluorononanoic acid (PFNA)	40.0	40.7		ng/L		102	68 - 128	4	30
Perfluorodecanoic acid (PFDA)	40.0	37.6		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)	40.0	35.3		ng/L		88	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)	40.0	37.2		ng/L		93	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)	40.0	36.0		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	36.1		ng/L		90	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)	35.4	36.2		ng/L		102	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.4		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)	38.6	35.1		ng/L		91	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS	37.9	36.3		ng/L		96	66 - 126	8	30
8:2 FTS	38.3	39.1		ng/L		102	67 - 127	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.1		ng/L		100	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*81*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*87*		*50 - 150*
13C5 PFNA	*83*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*86*		*50 - 150*
13C2 PFDoA	*85*		*50 - 150*
13C2 PFTeDA	*71*		*50 - 150*
13C3 PFBS	*81*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*76*		*50 - 150*
d3-NMeFOSAA	*84*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*80*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

LCMS

Prep Batch: 298925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-6	NOB_055	Total/NA	Water	3535	
MB 320-298925/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-6	NOB_055	Total/NA	Water	EPA 537(Mod)	298925
MB 320-298925/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298925
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298925
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298925

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Client Sample ID: NOB_055

Date Collected: 05/21/19 11:50
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-6

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			261.8 mL	10.0 mL	298925	06/04/19 06:51	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299173	06/05/19 05:44	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-6
SDG: SW-4- Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-6	NOB_055	Water	05/21/19 11:50	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-6
SDG Number: SW-4- Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 11:50

119052561.06

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
Surface Water, NOB_055

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.023	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.21	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: SW-4

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-007	NOB_055	5/21/2019 11:50:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		5/31/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		5/31/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		5/31/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		5/31/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB

317 Elm Street
Milford, NH 03055
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Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-007	NOB_055	5/21/2019 11:50:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-7
Laboratory Sample Delivery Group: SW-5 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:35:12 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-7

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-7

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_056 (320-50812-7) and (LCSD 320-298925/3-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298925.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample is yellow with particulates at the bottom of the bottle prior to extraction: NOB_056 (320-50812-7).

They were also yellow after extraction.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample have non-settleable particulates which clogged the solid-phase extraction column: NOB_056 (320-50812-7).

320-298925
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Client Sample ID: NOB_056

Lab Sample ID: 320-50812-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.8	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	6.5		1.9	0.46	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.8		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.7		1.9	0.23	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	22		1.9	0.79	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.5	J	1.9	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.40	J	1.9	0.29	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.6		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	J I	1.9	0.18	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.4		1.9	0.50	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Client Sample ID: NOB_056

Date Collected: 05/21/19 12:40
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-7

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.8**	**B**	1.9	0.33	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluoropentanoic acid (PFPeA)	**6.5**		1.9	0.46	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorohexanoic acid (PFHxA)	**7.8**		1.9	0.54	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluoroheptanoic acid (PFHpA)	**5.7**		1.9	0.23	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorooctanoic acid (PFOA)	**22**		1.9	0.79	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorononanoic acid (PFNA)	**1.5**	**J**	1.9	0.25	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorodecanoic acid (PFDA)	**0.40**	**J**	1.9	0.29	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorobutanesulfonic acid (PFBS)	**2.6**		1.9	0.19	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorohexanesulfonic acid (PFHxS)	**3.6**	**B**	1.9	0.16	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.23**	**J I**	1.9	0.18	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorooctanesulfonic acid (PFOS)	**7.4**		1.9	0.50	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/04/19 06:51	06/05/19 05:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		06/04/19 06:51	06/05/19 05:52	1
6:2 FTS	ND		9.3	1.9	ng/L		06/04/19 06:51	06/05/19 05:52	1
8:2 FTS	ND		1.9	0.35	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.83	ng/L		06/04/19 06:51	06/05/19 05:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*50*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C5 PFPeA	*78*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C2 PFHxA	*76*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C4 PFHpA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C4 PFOA	*81*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C5 PFNA	*83*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C2 PFDA	*84*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C2 PFUnA	*78*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C2 PFDoA	*74*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C2 PFTeDA	*51*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C3 PFBS	*74*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C2 PFHxDA	*25*	*	*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
18O2 PFHxS	*76*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
13C4 PFOS	*73*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
d3-NMeFOSAA	*80*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
M2-6:2 FTS	*90*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*
M2-8:2 FTS	*78*		*50 - 150*	*06/04/19 06:51*	*06/05/19 05:52*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-7	NOB_056	50	78	76	82	81	83	84	78
LCS 320-298925/2-A	Lab Control Sample	85	96	92	91	92	87	88	92
LCSD 320-298925/3-A	Lab Control Sample Dup	81	88	85	88	87	83	88	86
MB 320-298925/1-A	Method Blank	89	98	94	100	96	96	101	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-7	NOB_056	74	51	74	25 *	76	73	80	90
LCS 320-298925/2-A	Lab Control Sample	86	79	87	53	85	80	91	96
LCSD 320-298925/3-A	Lab Control Sample Dup	85	71	81	44 *	84	76	84	96
MB 320-298925/1-A	Method Blank	93	82	89	57	88	86	93	104

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-7	NOB_056	78
LCS 320-298925/2-A	Lab Control Sample	89
LCSD 320-298925/3-A	Lab Control Sample Dup	80
MB 320-298925/1-A	Method Blank	100

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298925/1-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.353	J	2.0	0.35	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.323	J	2.0	0.17	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:51	06/05/19 04:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:51	06/05/19 04:56	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:51	06/05/19 04:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:51	06/05/19 04:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFPeA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.1		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.1		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.1		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	33.3		ng/L		83	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.7		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.5		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2		ng/L		85	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.8		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.6		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	67 - 127
6:2 FTS	37.9	39.4		ng/L		104	66 - 126
8:2 FTS	38.3	39.6		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*96*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*92*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*86*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*53*		*50 - 150*
18O2 PFHxS	*85*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298925/3-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.5		ng/L		101	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	36.9		ng/L		92	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		97	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	40.7		ng/L		102	68 - 128	4	30
Perfluorodecanoic acid (PFDA)			40.0	37.6		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.3		ng/L		88	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)			40.0	37.2		ng/L		93	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	36.0		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.1		ng/L		90	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.2		ng/L		102	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.1		ng/L		91	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	36.3		ng/L		96	66 - 126	8	30
8:2 FTS			38.3	39.1		ng/L		102	67 - 127	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.1		ng/L		100	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*81*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*87*		*50 - 150*
13C5 PFNA	*83*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*86*		*50 - 150*
13C2 PFDoA	*85*		*50 - 150*
13C2 PFTeDA	*71*		*50 - 150*
13C3 PFBS	*81*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*76*		*50 - 150*
d3-NMeFOSAA	*84*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*80*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

LCMS

Prep Batch: 298925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-7	NOB_056	Total/NA	Water	3535	
MB 320-298925/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-7	NOB_056	Total/NA	Water	EPA 537(Mod)	298925
MB 320-298925/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298925
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298925
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298925

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Client Sample ID: NOB_056

Date Collected: 05/21/19 12:40
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-7

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			269.1 mL	10.0 mL	298925	06/04/19 06:51	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299173	06/05/19 05:52	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-7
SDG: SW-5 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-7	NOB_056	Water	05/21/19 12:40	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-7
SDG Number: SW-5 - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 12:40

119052561.07

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
Surface Water, NOB_056

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	0.003	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.019	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.38	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: SW-5

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-008	NOB_056	5/21/2019 12:40:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		5/31/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		5/31/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		5/31/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		5/31/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-008	NOB_056	5/21/2019 12:40:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-8
Laboratory Sample Delivery Group: SW-6 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 9:02:15 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-8

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-8

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_065 (320-51329-8), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_065 (320-51329-8).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_065 (320-51329-8).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Client Sample ID: NOB_065

Lab Sample ID: 320-51329-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.8	B	1.9	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	14		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	16		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	9.0		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	33		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	3.6		1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.94	J	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.4		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.7	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	14		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA
6:2 FTS	4.1	J	9.7	1.9	ng/L	1		EPA 537(Mod)	Total/NA
8:2 FTS	1.7	J	1.9	0.36	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Client Sample ID: NOB_065

Date Collected: 06/11/19 13:25
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-8

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**8.8**	**B**	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluoropentanoic acid (PFPeA)	**14**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorohexanoic acid (PFHxA)	**16**		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluoroheptanoic acid (PFHpA)	**9.0**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorooctanoic acid (PFOA)	**33**		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorononanoic acid (PFNA)	**3.6**		1.9	0.26	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorodecanoic acid (PFDA)	**0.94**	**J**	1.9	0.30	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorobutanesulfonic acid (PFBS)	**4.4**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorohexanesulfonic acid (PFHxS)	**7.7**	**B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorooctanesulfonic acid (PFOS)	**14**		1.9	0.52	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 07:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:32	1
6:2 FTS	**4.1**	**J**	9.7	1.9	ng/L		06/17/19 06:39	06/18/19 07:32	1
8:2 FTS	**1.7**	**J**	1.9	0.36	ng/L		06/17/19 06:39	06/18/19 07:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		06/17/19 06:39	06/18/19 07:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*60*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C2 PFHxA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C4 PFOA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C5 PFNA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C2 PFDA	*96*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C2 PFUnA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C2 PFDoA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C2 PFTeDA	*51*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C2 PFHxDA	*18*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
18O2 PFHxS	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
13C4 PFOS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
d3-NMeFOSAA	*103*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
M2-6:2 FTS	*109*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:32*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-8	NOB_065	60	91	86	96	92	91	96	97
LCS 320-301643/2-A	Lab Control Sample	84	87	90	94	89	85	94	87
LCSD 320-301643/3-A	Lab Control Sample Dup	86	91	88	93	89	87	91	95
MB 320-301643/1-A	Method Blank	82	91	88	97	90	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-8	NOB_065	88	51	88	18 *	85	84	103	109
LCS 320-301643/2-A	Lab Control Sample	92	74	92	41 *	86	83	102	102
LCSD 320-301643/3-A	Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
MB 320-301643/1-A	Method Blank	91	70	88	35 *	87	82	95	105

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-51329-8	NOB_065	95
LCS 320-301643/2-A	Lab Control Sample	96
LCSD 320-301643/3-A	Lab Control Sample Dup	101
MB 320-301643/1-A	Method Blank	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-301643/1-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 301643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303	J	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 05:56	1
6:2 FTS	ND		10	2.0	ng/L		06/17/19 06:39	06/18/19 05:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/17/19 06:39	06/18/19 05:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxA	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFTeDA	*70*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C2 PFHxDA	*35*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-6:2 FTS	*105*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 05:56*	*1*

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-301643/2-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 301643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.2		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.0		ng/L		100	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.6		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.2		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	35.8		ng/L		90	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.7		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.7		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	67 - 127
6:2 FTS	37.9	39.7		ng/L		105	66 - 126
8:2 FTS	38.3	41.7		ng/L		109	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.3		ng/L		101	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*50 - 150*
13C5 PFPeA	*87*		*50 - 150*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*94*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*85*		*50 - 150*
13C2 PFDA	*94*		*50 - 150*
13C2 PFUnA	*87*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*74*		*50 - 150*
13C3 PFBS	*92*		*50 - 150*
13C2 PFHxDA	*41*	*	*50 - 150*
18O2 PFHxS	*86*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*96*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-301643/3-A
Matrix: Water
Analysis Batch: 301867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 301643

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1		ng/L		103	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)			40.0	40.0		ng/L		100	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L		99	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	39.6		ng/L		99	64 - 124	1	30
Perfluorononanoic acid (PFNA)			40.0	42.1		ng/L		105	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	40.2		ng/L		100	69 - 129	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.8		ng/L		89	60 - 120	8	30
Perfluorododecanoic acid (PFDoA)			40.0	38.4		ng/L		96	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.5		ng/L		86	72 - 132	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.8		ng/L		92	68 - 128	1	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	73 - 133	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.0		ng/L		100	67 - 127	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	38.3		ng/L		99	68 - 128	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	40.2		ng/L		106	66 - 126	1	30
8:2 FTS			38.3	38.4		ng/L		100	67 - 127	8	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.5		ng/L		96	72 - 132	4	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*86*		*50 - 150*
13C5 PFPeA	*91*		*50 - 150*
13C2 PFHxA	*88*		*50 - 150*
13C4 PFHpA	*93*		*50 - 150*
13C4 PFOA	*89*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*91*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*96*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*88*		*50 - 150*
13C2 PFHxDA	*46*	*	*50 - 150*
18O2 PFHxS	*90*		*50 - 150*
13C4 PFOS	*83*		*50 - 150*
d3-NMeFOSAA	*102*		*50 - 150*
M2-6:2 FTS	*102*		*50 - 150*
M2-8:2 FTS	*101*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-8	NOB_065	Total/NA	Water	3535	
MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-8	NOB_065	Total/NA	Water	EPA 537(Mod)	301643
MB 320-301643/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	301643
LCS 320-301643/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	301643
LCSD 320-301643/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Client Sample ID: NOB_065

Date Collected: 06/11/19 13:25
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-8

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	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 07:32	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-8
SDG: SW-6 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-8	NOB_065	Water	06/11/19 13:25	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 ~~1430~~ 1500

Ver: 08/04/2016

Page 17 of 18

6/27/2019

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-8
SDG Number: SW-6 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 01:25

119061344.04

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_65

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.020	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.11	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-004	NOB_065	6/11/2019 1:25:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-004	NOB_065	6/11/2019 1:25:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

317 Elm Street
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-9
Laboratory Sample Delivery Group: SW-7 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 9:03:46 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-9

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-9

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_066 (320-51329-9), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_066 (320-51329-9)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_066 (320-51329-9).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_066 (320-51329-9).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Client Sample ID: NOB_066

Lab Sample ID: 320-51329-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	7.2	B	2.0	0.35	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	9.3		2.0	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	10		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.3		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	30		2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	2.2		2.0	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.65	J I	2.0	0.31	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.8		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.3	B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	14		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Client Sample ID: NOB_066

Date Collected: 06/11/19 14:10
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-9

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.2**	**B**	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluoropentanoic acid (PFPeA)	**9.3**		2.0	0.48	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorohexanoic acid (PFHxA)	**10**		2.0	0.57	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluoroheptanoic acid (PFHpA)	**6.3**		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorooctanoic acid (PFOA)	**30**		2.0	0.84	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorononanoic acid (PFNA)	**2.2**		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorodecanoic acid (PFDA)	**0.65**	**J I**	2.0	0.31	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorobutanesulfonic acid (PFBS)	**4.8**		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorohexanesulfonic acid (PFHxS)	**6.3**	**B**	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorooctanesulfonic acid (PFOS)	**14**		2.0	0.53	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 07:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 07:40	1
6:2 FTS	ND		9.9	2.0	ng/L		06/17/19 06:39	06/18/19 07:40	1
8:2 FTS	ND		2.0	0.37	ng/L		06/17/19 06:39	06/18/19 07:40	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.88	ng/L		06/17/19 06:39	06/18/19 07:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*58*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C5 PFPeA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C2 PFHxA	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C4 PFHpA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C4 PFOA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C5 PFNA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C2 PFUnA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C2 PFTeDA	*53*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C3 PFBS	*83*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C2 PFHxDA	*18*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
18O2 PFHxS	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
13C4 PFOS	*80*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
M2-6:2 FTS	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*
M2-8:2 FTS	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:40*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-9	NOB_066	58	86	85	92	89	91	95	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	d3-NMeFOSAA	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-9	NOB_066	93	53	83	18 *	85	80	98	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M282FTS							
Lab Sample ID	Client Sample ID	(50-150)							
320-51329-9	NOB_066	95							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-9	NOB_066	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-9	NOB_066	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Client Sample ID: NOB_066

Date Collected: 06/11/19 14:10
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-9

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			253.4 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 07:40	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-9
SDG: SW-7 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-9	NOB_066	Water	06/11/19 14:10	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-9
SDG Number: SW-7 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 02:10

119061344.05

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_66

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.018	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	<0.05	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-005	NOB_066	6/11/2019 2:10:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-005	NOB_066	6/11/2019 2:10:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-12
Laboratory Sample Delivery Group: SW-8 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:52:30 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-12

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-12

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C2 PFTeDA and 13C2 PFHxDA: NOB_069 (320-51329-12). The sample was re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_069 (320-51329-12).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_069 (320-51329-12).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Client Sample ID: NOB_069

Lab Sample ID: 320-51329-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.9	B	2.0	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.9		2.0	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.3		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.0		2.0	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	27		2.0	0.83	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.1	J	2.0	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.8		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7	B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.5		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Client Sample ID: NOB_069

Date Collected: 06/11/19 15:50
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-12

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.9**	**B**	2.0	0.34	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluoropentanoic acid (PFPeA)	**4.9**		2.0	0.48	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorohexanoic acid (PFHxA)	**6.3**		2.0	0.57	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluoroheptanoic acid (PFHpA)	**5.0**		2.0	0.24	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorooctanoic acid (PFOA)	**27**		2.0	0.83	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorononanoic acid (PFNA)	**1.1**	**J**	2.0	0.26	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.28	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorobutanesulfonic acid (PFBS)	**3.8**		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**	**B**	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorooctanesulfonic acid (PFOS)	**5.5**		2.0	0.53	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 08:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 08:04	1
6:2 FTS	ND		9.8	2.0	ng/L		06/17/19 06:39	06/18/19 08:04	1
8:2 FTS	ND		2.0	0.37	ng/L		06/17/19 06:39	06/18/19 08:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.87	ng/L		06/17/19 06:39	06/18/19 08:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*58*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C5 PFPeA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C2 PFHxA	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C4 PFHpA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C4 PFOA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C5 PFNA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C2 PFDoA	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C2 PFTeDA	*49*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C3 PFBS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C2 PFHxDA	*17*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
18O2 PFHxS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
d3-NMeFOSAA	*96*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
M2-6:2 FTS	*101*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*
M2-8:2 FTS	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:04*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-12	NOB_069	58	86	84	94	94	92	94	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-12	NOB_069	84	49 *	86	17 *	84	82	96	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (50-150)							
320-51329-12	NOB_069	93							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-12	NOB_069	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-12	NOB_069	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Client Sample ID: NOB_069

Date Collected: 06/11/19 15:50
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-12

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			256.4 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 08:04	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-12
SDG: SW-8 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-12	NOB_069	Water	06/11/19 15:50	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-12
SDG Number: SW-8 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 03:50

119061344.08

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_69

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.016	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.13	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-008	NOB_069	6/11/2019 3:50:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-008	NOB_069	6/11/2019 3:50:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

317 Elm Street
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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-50812-8
Laboratory Sample Delivery Group: SW-9 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/12/2019 8:36:09 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-50812-8

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-50812-8

Receipt
The samples were received on 5/31/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_057 (320-50812-8) and (LCSD 320-298925/3-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-298925.

320-298925
Method code: 3535 PFC-W

Method(s) 3535: The following sample is yellow with particulates at the bottom of the bottle prior to extraction: NOB_057 (320-50812-8).

They were also yellow after extraction.

320-298925
Method code: 3535 PFC-W

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Client Sample ID: NOB_057

Lab Sample ID: 320-50812-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.3	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.6		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.5		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.9		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.98	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.34	J I	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.9		1.9	0.51	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Client Sample ID: NOB_057

Date Collected: 05/21/19 13:20
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-8

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.3**	**B**	1.9	0.33	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluoropentanoic acid (PFPeA)	**3.6**		1.9	0.47	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorohexanoic acid (PFHxA)	**4.5**		1.9	0.55	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluoroheptanoic acid (PFHpA)	**2.9**		1.9	0.24	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorooctanoic acid (PFOA)	**12**		1.9	0.81	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorononanoic acid (PFNA)	**0.98**	**J**	1.9	0.26	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorodecanoic acid (PFDA)	**0.34**	**J I**	1.9	0.30	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorobutanesulfonic acid (PFBS)	**2.8**		1.9	0.19	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorohexanesulfonic acid (PFHxS)	**2.0**	**B**	1.9	0.16	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorooctanesulfonic acid (PFOS)	**3.9**		1.9	0.51	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		06/04/19 06:51	06/05/19 06:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 06:00	1
6:2 FTS	ND		9.5	1.9	ng/L		06/04/19 06:51	06/05/19 06:00	1
8:2 FTS	ND		1.9	0.36	ng/L		06/04/19 06:51	06/05/19 06:00	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/04/19 06:51	06/05/19 06:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*52*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C5 PFPeA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C2 PFHxA	*80*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C4 PFHpA	*84*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C4 PFOA	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C5 PFNA	*85*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C2 PFDA	*87*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C2 PFDoA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C2 PFTeDA	*54*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C3 PFBS	*80*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C2 PFHxDA	*20*	*	*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
18O2 PFHxS	*81*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
13C4 PFOS	*79*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
d3-NMeFOSAA	*85*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
M2-6:2 FTS	*92*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*
M2-8:2 FTS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 06:00*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-50812-8	NOB_057	52	82	80	84	88	85	87	90
LCS 320-298925/2-A	Lab Control Sample	85	96	92	91	92	87	88	92
LCSD 320-298925/3-A	Lab Control Sample Dup	81	88	85	88	87	83	88	86
MB 320-298925/1-A	Method Blank	89	98	94	100	96	96	101	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-50812-8	NOB_057	82	54	80	20 *	81	79	85	92
LCS 320-298925/2-A	Lab Control Sample	86	79	87	53	85	80	91	96
LCSD 320-298925/3-A	Lab Control Sample Dup	85	71	81	44 *	84	76	84	96
MB 320-298925/1-A	Method Blank	93	82	89	57	88	86	93	104

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M282FTS (50-150)
320-50812-8	NOB_057	86
LCS 320-298925/2-A	Lab Control Sample	89
LCSD 320-298925/3-A	Lab Control Sample Dup	80
MB 320-298925/1-A	Method Blank	100

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Lab Sample ID: MB 320-298925/1-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 298925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.353	J	2.0	0.35	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.323	J	2.0	0.17	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/04/19 06:51	06/05/19 04:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/04/19 06:51	06/05/19 04:56	1
6:2 FTS	ND		10	2.0	ng/L		06/04/19 06:51	06/05/19 04:56	1
8:2 FTS	ND		2.0	0.38	ng/L		06/04/19 06:51	06/05/19 04:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		06/04/19 06:51	06/05/19 04:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFPeA	*98*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxA	*94*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C2 PFHxDA	*57*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
18O2 PFHxS	*88*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
13C4 PFOS	*86*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-6:2 FTS	*104*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*
M2-8:2 FTS	*100*		*50 - 150*	*06/04/19 06:51*	*06/05/19 04:56*	*1*

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCS 320-298925/2-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 298925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	37.1		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.1		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.1		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.1		ng/L		98	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L		100	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	33.3		ng/L		83	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.7		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.5		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	34.2		ng/L		85	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.8		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.6		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	67 - 127
6:2 FTS	37.9	39.4		ng/L		104	66 - 126
8:2 FTS	38.3	39.6		ng/L		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	72 - 132

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*85*		*50 - 150*
13C5 PFPeA	*96*		*50 - 150*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*91*		*50 - 150*
13C4 PFOA	*92*		*50 - 150*
13C5 PFNA	*87*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*92*		*50 - 150*
13C2 PFDoA	*86*		*50 - 150*
13C2 PFTeDA	*79*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
13C2 PFHxDA	*53*		*50 - 150*
18O2 PFHxS	*85*		*50 - 150*
13C4 PFOS	*80*		*50 - 150*
d3-NMeFOSAA	*91*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*89*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 (Continued)

Lab Sample ID: LCSD 320-298925/3-A
Matrix: Water
Analysis Batch: 299173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	40.5		ng/L		101	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)			40.0	37.5		ng/L		94	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	36.9		ng/L		92	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	39.2		ng/L		98	66 - 126	0	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		97	64 - 124	5	30
Perfluorononanoic acid (PFNA)			40.0	40.7		ng/L		102	68 - 128	4	30
Perfluorodecanoic acid (PFDA)			40.0	37.6		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	35.3		ng/L		88	60 - 120	6	30
Perfluorododecanoic acid (PFDoA)			40.0	37.2		ng/L		93	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	36.0		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	36.1		ng/L		90	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)			35.4	36.2		ng/L		102	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	63 - 123	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.1		ng/L		105	68 - 128	2	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	67 - 127	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.1		ng/L		91	68 - 128	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.7		ng/L		99	67 - 127	2	30
6:2 FTS			37.9	36.3		ng/L		96	66 - 126	8	30
8:2 FTS			38.3	39.1		ng/L		102	67 - 127	1	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.1		ng/L		100	72 - 132	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*81*		*50 - 150*
13C5 PFPeA	*88*		*50 - 150*
13C2 PFHxA	*85*		*50 - 150*
13C4 PFHpA	*88*		*50 - 150*
13C4 PFOA	*87*		*50 - 150*
13C5 PFNA	*83*		*50 - 150*
13C2 PFDA	*88*		*50 - 150*
13C2 PFUnA	*86*		*50 - 150*
13C2 PFDoA	*85*		*50 - 150*
13C2 PFTeDA	*71*		*50 - 150*
13C3 PFBS	*81*		*50 - 150*
13C2 PFHxDA	*44*	*	*50 - 150*
18O2 PFHxS	*84*		*50 - 150*
13C4 PFOS	*76*		*50 - 150*
d3-NMeFOSAA	*84*		*50 - 150*
M2-6:2 FTS	*96*		*50 - 150*
M2-8:2 FTS	*80*		*50 - 150*

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

LCMS

Prep Batch: 298925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-8	NOB_057	Total/NA	Water	3535	
MB 320-298925/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 299173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-50812-8	NOB_057	Total/NA	Water	EPA 537(Mod)	298925
MB 320-298925/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	298925
LCS 320-298925/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	298925
LCSD 320-298925/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	298925

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Client Sample ID: NOB_057

Date Collected: 05/21/19 13:20
Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-8

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			262.7 mL	10.0 mL	298925	06/04/19 06:51	MNV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			299173	06/05/19 06:00	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-50812-8
SDG: SW-9 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-50812-8	NOB_057	Water	05/21/19 13:20	05/31/19 09:20	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Karl Ericksson	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-224-4182	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: TrustFund_Londonderry DWGTF Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

320-50812 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MTBE_1122	5/21/19	0910	G	DW	N		X		21 Tokanel Dr.
NOB_051	5/21/19	0945	G	DW	N		X		12 Mont Vernon Dr.
NOB_052	5/21/19	1040	G	SW	N		X		SW-1
NOB_053	5/21/19	1100	G	SW	N		X		SW-2
* NOB_054	5/21/19	1115	G	SW	N		X		SW-3
(*) NOB_055	5/21/19	1150	G	SW	N		X		SW-4
NOB_056	5/21/19	1240	G	SW	N		X		SW-5
NOB_057	5/21/19	1320	G	SW	N		X		SW-9
Field Blank	5/21/19	1325	G	SW	N		X		Lab supplied blank

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 5/22/19 0700	Company: NUBIS	Received by: NHDES Cold Storage (1.7°C)	Date/Time: 5/22/19 14:42	Company: NHDES
Relinquished by:	Date/Time: 5/30/19 14:15	Company: DES	Received by: Shipping cooler (3.3°C)	Date/Time: 5/30/19 14:15	Company: DES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 5/31/19 920	Company: ETA-SAC

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 741608
Cooler Temperature(s) °C and Other Remarks: 1.6

Ver: 08/04/2016

* 1/2 containers labeled as "NOB_54" MAN 5/31/19 (*) NO date/time on 1/2 containers. MAN 5/31/19

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-8
SDG Number: SW-9 - Londonderry, NH

Login Number: 50812
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	741608
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 sample IDs on the containers and the COC.	False	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190606015

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

06 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119052561.01	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, MTBE_1122**	Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Drinking Water, NOB_051**	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_052**	Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_053**	Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_054**	Water	21-May-19 11:15	21-May-19 15:45
119052561.06	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_055**	Water	21-May-19 11:50	21-May-19 15:45
119052561.07	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_056**	Water	21-May-19 12:40	21-May-19 15:45
119052561.08	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	**Surface Water, NOB_057**	Water	21-May-19 13:20	21-May-19 15:45

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 06-Jun-19 08:17

REPORT OF ANALYSIS

sampled Date: 21-May-2019 01:20

119052561.08

Londonderry GW Quality Eval.,
Londonderry, NH, #95160.00
Surface Water, NOB_057

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Barium	0.012	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/05/2019 16:04	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/05/2019 16:04	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/05/2019 16:04	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/05/2019 16:04	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.15	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Date Rec'd: 5/21/19 Time Rec'd: 1545 Temp Rec'd: S
Rec'd by: Location:
Cooler: Y N Ice: Y N NA
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER

AQUARIAN ANALYTICAL/VAOS - 2561 (11-8)

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry GW Quality Event
Town/Site: Londonderry
Sampler: Karl Karlson
Company: Nobis - Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 507 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: Metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total / Phosphorus	Aquarian ID
MTBE-1122	5/21/19 0910	DW	1														X				X									1
NOB-051	5/21/19 0945	DW	1														X				X									2
NOB-052	5/21/19 1040	SW	2														X				X								X	3
NOB-053	5/21/19 1100	SW	2														X				X								X	4
NOB-054	5/21/19 1115	SW	2														X				X								X	5
NOB-055	5/21/19 1150	SW	2														X				X								X	6
NOB-056	5/21/19 1240	SW	2														X				X								X	7
~~NOB-057~~ KK	~~5/21/19 1320~~	~~SW~~	~~2~~	KK																										
NOB-057	5/21/19 1320	SW	2														X				X								X	8
* see attached 5/22 a SW																														

Relinquished by:	Date/Time:	Received by:
	5/21/19 1545	
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: S C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ___Yes ✓ No
EDD required? ___Yes ✓ No
MCP Compliance required? ___Yes ✓ No
Is this NH "Odd Fund" related? ___Yes ✓ No
Does a price quote apply? ___Yes ✓ No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19050392

Lab ID: 19050392
Date Received: 5/23/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19050392
Date: 6/24/2019

Lab ID: 19050392

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: Trip Blank has hit for Toluene but samples all <DL.

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19050392
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: SW-9

Analytical Results

Lab ID: 19050392
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-009	NOB_057	5/21/2019 1:20:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		5/31/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		5/31/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		5/31/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			5/31/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		5/31/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19050392-009	NOB_057	5/21/2019 1:20:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-11
Laboratory Sample Delivery Group: SW-10 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:53:57 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-11

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-11

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_068 (320-51329-11), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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) EPA 537(Mod): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

NOB_068 (320-51329-11)

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_068 (320-51329-11).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_068 (320-51329-11).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Client Sample ID: NOB_068

Lab Sample ID: 320-51329-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.6	B	1.9	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.3		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.2		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.3		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.1	J I	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.40	J	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.2		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Client Sample ID: NOB_068

Date Collected: 06/11/19 15:20
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-11

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.6**	**B**	1.9	0.33	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluoropentanoic acid (PFPeA)	**4.3**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorohexanoic acid (PFHxA)	**5.2**		1.9	0.55	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluoroheptanoic acid (PFHpA)	**3.3**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorooctanoic acid (PFOA)	**12**		1.9	0.81	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorononanoic acid (PFNA)	**1.1**	**J I**	1.9	0.26	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorodecanoic acid (PFDA)	**0.40**	**J**	1.9	0.30	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorobutanesulfonic acid (PFBS)	**2.8**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorohexanesulfonic acid (PFHxS)	**2.2**	**B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorooctanesulfonic acid (PFOS)	**4.2**		1.9	0.52	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 07:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:56	1
6:2 FTS	ND		9.5	1.9	ng/L		06/17/19 06:39	06/18/19 07:56	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 07:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/17/19 06:39	06/18/19 07:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*56*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C5 PFPeA	*83*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C2 PFHxA	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C4 PFOA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C5 PFNA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C2 PFUnA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C2 PFDoA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C2 PFTeDA	*51*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C3 PFBS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C2 PFHxDA	*17*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
18O2 PFHxS	*83*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
13C4 PFOS	*81*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
d3-NMeFOSAA	*101*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
M2-6:2 FTS	*102*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*
M2-8:2 FTS	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:56*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-11	NOB_068	56	83	84	93	91	91	98	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-11	NOB_068	89	51	84	17 *	83	81	101	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (50-150)							
320-51329-11	NOB_068	92							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-11	NOB_068	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-11	NOB_068	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Client Sample ID: NOB_068

Date Collected: 06/11/19 15:20
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-11

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			261.9 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 07:56	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-11
SDG: SW-10 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-11	NOB_068	Water	06/11/19 15:20	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-11
SDG Number: SW-10 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 03:20

119061344.07

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_68

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.011	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.14	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-007	NOB_068	6/11/2019 3:20:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

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Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-007	NOB_068	6/11/2019 3:20:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-13
Laboratory Sample Delivery Group: SW-11 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:45:51 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-13

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-13

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_070 (320-51329-13), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_070 (320-51329-13).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_070 (320-51329-13).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Client Sample ID: NOB_070

Lab Sample ID: 320-51329-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.8	B	1.9	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.3		1.9	0.47	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	8.9		1.9	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	7.4		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	42		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.31	J	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.5		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6	B	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.9		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Client Sample ID: NOB_070

Date Collected: 06/12/19 09:25
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-13

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.8**	**B**	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluoropentanoic acid (PFPeA)	**7.3**		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorohexanoic acid (PFHxA)	**8.9**		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluoroheptanoic acid (PFHpA)	**7.4**		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorooctanoic acid (PFOA)	**42**		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorononanoic acid (PFNA)	**1.2**	**J**	1.9	0.26	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorodecanoic acid (PFDA)	**0.31**	**J**	1.9	0.30	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorobutanesulfonic acid (PFBS)	**3.5**		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorohexanesulfonic acid (PFHxS)	**2.6**	**B**	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorooctanesulfonic acid (PFOS)	**3.9**		1.9	0.52	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 08:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 08:12	1
6:2 FTS	ND		9.6	1.9	ng/L		06/17/19 06:39	06/18/19 08:12	1
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 08:12	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		06/17/19 06:39	06/18/19 08:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*59*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C5 PFPeA	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C2 PFHxA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C4 PFHpA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C4 PFOA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C2 PFUnA	*94*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C2 PFDoA	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C2 PFTeDA	*50*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C3 PFBS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C2 PFHxDA	*19*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
18O2 PFHxS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
13C4 PFOS	*81*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
M2-6:2 FTS	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*
M2-8:2 FTS	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:12*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-13	NOB_070	59	85	86	90	86	90	98	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-13	NOB_070	86	50	84	19 *	84	81	98	97

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (50-150)							
320-51329-13	NOB_070	91							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-13	NOB_070	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-13	NOB_070	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Client Sample ID: NOB_070

Date Collected: 06/12/19 09:25
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-13

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	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 08:12	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-13
SDG: SW-11 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-13	NOB_070	Water	06/12/19 09:25	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-13
SDG Number: SW-11 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627025

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061387.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_070**	Surface Water	12-Jun-19 09:25	12-Jun-19 10:40
119061387.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_071**	Surface Water	12-Jun-19 10:00	12-Jun-19 10:40

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 12-Jun-2019 09:25

119061387.01

Londonderry WQ Eval.,
Londonderry, NH, #95160.00

NOB_070

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Barium	0.016	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 15:15	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 15:15	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 15:15	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 15:15	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.15	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

Date Rec'd: 6/12/19 Time Rec'd: 1040 Temp Rec'd: 6.9
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Sulfide: Pos Neg
4oz: ___ 16oz: ___ LC___ OTHER___

L1906 - 1387

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190627025

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-070	6-12-19/0825	SW	2														X											X	1
NOB-071	6-12-19/1000	SW	2														X											X	2

Relinquished by:	Date/Time:	Received by:
[signature]	6/12/19 1040	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 6.9 °C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required?____Yes____No
Is this NH "Odd Fund" related?____Yes____No
Does a price quote apply?____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-009	NOB_070	6/11/2019 9:25:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-009	NOB_070	6/11/2019 9:25:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-14
Laboratory Sample Delivery Group: SW-12 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:59:17 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-14

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-14

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_071 (320-51329-14), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_071 (320-51329-14).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_071 (320-51329-14).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Client Sample ID: NOB_071

Lab Sample ID: 320-51329-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.3	B	2.0	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.0		2.0	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.3		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.4		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	24		2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.96	J	2.0	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.2		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0	B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.0		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Client Sample ID: NOB_071

Date Collected: 06/12/19 10:00
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-14

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.3**	**B**	2.0	0.34	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluoropentanoic acid (PFPeA)	**5.0**		2.0	0.48	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorohexanoic acid (PFHxA)	**6.3**		2.0	0.57	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluoroheptanoic acid (PFHpA)	**4.4**		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorooctanoic acid (PFOA)	**24**		2.0	0.84	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorononanoic acid (PFNA)	**0.96**	**J**	2.0	0.27	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorobutanesulfonic acid (PFBS)	**3.2**		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorohexanesulfonic acid (PFHxS)	**2.0**	**B**	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorooctanesulfonic acid (PFOS)	**4.0**		2.0	0.53	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/17/19 06:39	06/18/19 08:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 08:20	1
6:2 FTS	ND		9.9	2.0	ng/L		06/17/19 06:39	06/18/19 08:20	1
8:2 FTS	ND		2.0	0.37	ng/L		06/17/19 06:39	06/18/19 08:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.88	ng/L		06/17/19 06:39	06/18/19 08:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*62*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C5 PFPeA	*91*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C2 PFHxA	*89*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C4 PFOA	*92*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C2 PFDA	*103*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C2 PFDoA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C2 PFTeDA	*55*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C3 PFBS	*86*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C2 PFHxDA	*25*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
18O2 PFHxS	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
13C4 PFOS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
M2-6:2 FTS	*106*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*
M2-8:2 FTS	*99*		*50 - 150*	*06/17/19 06:39*	*06/18/19 08:20*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-14	NOB_071	62	91	89	97	92	90	103	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-14	NOB_071	90	55	86	25 *	87	84	95	106

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (50-150)							
320-51329-14	NOB_071	99							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-14	NOB_071	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-14	NOB_071	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Client Sample ID: NOB_071

Date Collected: 06/12/19 10:00
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-14

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			253.8 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 08:20	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-14
SDG: SW-12 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-14	NOB_071	Water	06/12/19 10:00	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-14
SDG Number: SW-12 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627025

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061387.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_070**	Surface Water	12-Jun-19 09:25	12-Jun-19 10:40
119061387.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_071**	Surface Water	12-Jun-19 10:00	12-Jun-19 10:40

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 12-Jun-2019 10:00

119061387.02

Londonderry WQ Eval.,
Londonderry, NH, #95160.00

NOB_071

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Barium	0.011	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 15:15	EPA 200.8	RT
Lead	<0.001	0.001	mg/L	06/26/2019 15:15	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 15:15	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 15:15	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 15:15	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.13	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

Date Rec'd: 6/12/19 Time Rec'd: 1040 Temp Rec'd: 6.9
Rec'd by: Location:
Cooler: Y N Ice: Y N
Chlorine: Pos Neg NA
Sulfide: Pos Neg
4oz: ___ 16oz: ___ LC___ OTHER___

L1906 - 1387

AQUARIAN ANALYTICAL

A Division of Nelson Analytical, LLC

153 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

RP190627025

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@nobis-group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only:	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only:	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite / Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-070	6-12-19/0825	SW	2														X											X	1
NOB-071	6-12-19/1000	SW	2														X											X	2

Relinquished by:	Date/Time:	Received by:
[signature]	6/12/19 1040	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice?: Yes / No
Receipt Temperature: 6.9 °C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required?____Yes____No
Is this NH "Odd Fund" related?____Yes____No
Does a price quote apply?____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-010	NOB_071	6/11/2019 10:00:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-010	NOB_071	6/11/2019 10:00:00 AM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-10
Laboratory Sample Delivery Group: SW-13 - Londonderry, NH
Client Project/Site: DWGTF_Londonderry

For:
New Hampshire Dept of Environmental Serv
Waste Mgmt Div MtBe Remediation Bureau
29 Hazen Dr
PO BOX 95
Concord, New Hampshire 03302-0095

Attn: Mr. Derek Bennett

Authorized for release by:
6/27/2019 8:57:29 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

Table of Contents

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 320-51329-10

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-51329-10

Receipt
The samples were received on 6/14/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 2.4º C.

LCMS
Method(s) EPA 537(Mod): The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: NOB_067 (320-51329-10), (LCS 320-301643/2-A), (LCSD 320-301643/3-A) and (MB 320-301643/1-A). The samples were re-analyzed with concurring results. 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.

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

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-301643.

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following samples contain Trizma, so the MB/LCS/LCSD of this batch also contains Trizma: NOB_067 (320-51329-10).

Method Code: 3535 PFC
preparation batch 320-301643

Method(s) 3535: The following sample was observed to be a light yellow color and contained sediment prior to extraction: NOB_067 (320-51329-10).

Method Code: 3535 PFC
preparation batch 320-301643

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

Detection Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Client Sample ID: NOB_067

Lab Sample ID: 320-51329-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.2	B	2.0	0.34	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.5		2.0	0.48	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.7		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.8		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	11		2.0	0.84	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.87	J	2.0	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.35	J	2.0	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.3		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8	J B	2.0	0.17	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Client Sample ID: NOB_067

Date Collected: 06/11/19 14:45
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-10

Matrix: Water

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.2**	**B**	2.0	0.34	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluoropentanoic acid (PFPeA)	**3.5**		2.0	0.48	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorohexanoic acid (PFHxA)	**3.7**		2.0	0.57	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluoroheptanoic acid (PFHpA)	**2.8**		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorooctanoic acid (PFOA)	**11**		2.0	0.84	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorononanoic acid (PFNA)	**0.87**	**J**	2.0	0.27	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorodecanoic acid (PFDA)	**0.35**	**J**	2.0	0.30	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorobutanesulfonic acid (PFBS)	**2.3**		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorohexanesulfonic acid (PFHxS)	**1.8**	**J B**	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorooctanesulfonic acid (PFOS)	**3.8**		2.0	0.53	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.31	ng/L		06/17/19 06:39	06/18/19 07:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		06/17/19 06:39	06/18/19 07:48	1
6:2 FTS	ND		9.8	2.0	ng/L		06/17/19 06:39	06/18/19 07:48	1
8:2 FTS	ND		2.0	0.37	ng/L		06/17/19 06:39	06/18/19 07:48	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.88	ng/L		06/17/19 06:39	06/18/19 07:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*63*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C5 PFPeA	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C2 PFHxA	*85*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C4 PFOA	*90*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C5 PFNA	*95*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C2 PFUnA	*87*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C2 PFDoA	*83*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C2 PFTeDA	*55*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C3 PFBS	*84*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C2 PFHxDA	*23*	*	*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
18O2 PFHxS	*82*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
13C4 PFOS	*83*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
M2-6:2 FTS	*99*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*
M2-8:2 FTS	*93*		*50 - 150*	*06/17/19 06:39*	*06/18/19 07:48*	*1*

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-150)	PFPeA (50-150)	PFHxA (50-150)	PFHpA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)
320-51329-10	NOB_067	63	87	85	96	90	95	97	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (50-150)	PFTDA (50-150)	3C3-PFBS (50-150)	PFHxDA (50-150)	PFHxS (50-150)	PFOS (50-150)	d3-NMeFOSAA (50-150)	M262FTS (50-150)
320-51329-10	NOB_067	83	55	84	23 *	82	83	98	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (50-150)							
320-51329-10	NOB_067	93							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxDA = 13C2 PFHxDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3-NMeFOSAA = d3-NMeFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Association Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

LCMS

Prep Batch: 301643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-10	NOB_067	Total/NA	Water	3535	

Analysis Batch: 301867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-51329-10	NOB_067	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Client Sample ID: NOB_067

Date Collected: 06/11/19 14:45
Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-10

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			254.2 mL	10.00 mL	301643	06/17/19 06:39	MYV	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			301867	06/18/19 07:48	JRB	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Laboratory: Eurofins 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
ANAB	DoD		L2468	01-20-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 537(Mod)	3535	Water	6:2 FTS
EPA 537(Mod)	3535	Water	8:2 FTS
EPA 537(Mod)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
EPA 537(Mod)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluorobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluorodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)
EPA 537(Mod)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluorononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perfluorooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)
EPA 537(Mod)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New Hampshire	NELAP	1	2337	11-17-19

Method Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.1, Table B-15	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: New Hampshire Dept of Environmental Serv
Project/Site: DWGTF_Londonderry

Job ID: 320-51329-10
SDG: SW-13 - Londonderry, NH

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-10	NOB_067	Water	06/11/19 14:45	06/14/19 09:15	

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DTB /	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603 749-2007 /	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: ~~TrustFund_Londonderry~~ DWGTF_LONDONDERRY	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

20 analytes

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (20 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_058	6-3-19	1200	G	DW	N		X		114 LITCHFIELD RD
NOB_059	6-3-19	1225	G	DW	N		X		7 ROLLING RIDGE RD
NOB_060	6-5-19	945	G	DW	N		X		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	G	DW	N		X		18 OTTERSON RD

320-51329 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assesse
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-5-19 / 1530	NOBIS	[signature] NHDES cold House	6/5/19 15:30	NHDES
[signature]	6/13/19 1430	DES	Shipping cooler 4.7°	6/13/19 1430	DES
			[signature]	6/14/19 915	EA DSL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C

Ver: 08/04/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: R. Rizza	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone: 603-499-2007	E-Mail: orlette.johnson@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services				Job #:
Address: 29 Hazen Drive	Due Date Requested:			
City: Concord	TAT Requested (days): Standard TAT			
State, Zip: NH, 03302				
Phone: (603) 271-8520	PO #: Purchase Order not required			
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904			
Project Name: DWGTF_Londonderry	Project #:			
Site: Londonderry, NH	SSOW#:			

Analysis Requested

80 Analyte

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS, Standard List (80 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
NOB_062 5 Allison Ln.	6-11-19	0930	G	DW	N		X		
NOB_063 29 Beacon St.	6-11-19	1015	G	DW	N		X		
NOB_064 68 Alexander Rd.	6-11-19	1055	G	DW	N		X		
NOB_065	6-11-19	1325	G	SW	N		X		
NOB_066	6-11-19	1410	G	SW	N		X		
NOB_067	6-11-19	1445	G	SW	N		X		
NOB_068	6-11-19	1520	G	SW	N		X		
NOB_069	6-11-19	1550	G	SW	N		X		
NOB_070	6-12-19	0925	G	SW	N		X		
NOB_071	6-12-19	1000	G	SW	N		X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-12-19 12:00	Company: NOBIS FAIDOE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 6-13-19 8:30	Company: NOBIS	Received by: NHDES Cold Storage	Date/Time: 6/13/19 8:30	Company: DES (4.7°C)
Relinquished by:	Date/Time: 6/13/19 14:30	Company: NHDES	Received by: shipping cooler - (4.7°C)	Date/Time: 6/13/19 14:30	Company: NHDES

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0°C, 2.4°C 915 6/14/19

6/14/19 1430 ESDS

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-10
SDG Number: SW-13 - Londonderry, NH

Login Number: 51329
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	624536, 806430
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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 <6mm (1/4").	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

RP190627023

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Nobis Engineering, Inc.:

27 June 2019

18 Chenell Drive Concord NH , 03301:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
119061344.01	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_062, 5 Allison Lane**	Drinking Water	11-Jun-19 09:30	11-Jun-19 16:46
119061344.02	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_063, 29 Beacon Street**	Drinking Water	11-Jun-19 10:15	11-Jun-19 16:46
119061344.03	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_064, 68 Alexander Road**	Drinking Water	11-Jun-19 10:55	11-Jun-19 16:46
119061344.04	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_65**	Surface Water	11-Jun-19 13:25	11-Jun-19 16:46
119061344.05	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_66**	Surface Water	11-Jun-19 14:10	11-Jun-19 16:46
119061344.06	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_67**	Surface Water	11-Jun-19 14:45	11-Jun-19 16:46
119061344.07	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_68**	Surface Water	11-Jun-19 15:20	11-Jun-19 16:46
119061344.08	Londonderry WQ Eval., Londonderry, NH, #95160.00:	**NOB_69**	Surface Water	11-Jun-19 15:50	11-Jun-19 16:46

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
www.nelsonanalytical.com

Date Reported : 27-Jun-19 12:35

REPORT OF ANALYSIS

sampled Date: 11-Jun-2019 02:45

119061344.06

Londonderry WQ Eval.,
Londonderry, NH, #95160.00
NOB_67

Metals by ICP/MS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Arsenic	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Barium	0.021	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Cadmium	<0.001	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Chromium	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT
Lead	0.002	0.001	mg/L	06/26/2019 14:16	EPA 200.8	RT
Mercury	<0.0004	0.0004	mg/L	06/26/2019 14:16	EPA 200.8	RT
Selenium	<0.010	0.010	mg/L	06/26/2019 14:16	EPA 200.8	RT
Silver	<0.010	0.01	mg/L	06/26/2019 14:16	EPA 200.8	RT

Total Phosphate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Phosphate-PO4	0.17	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

AQUARIAN ANALYTICAL 1806-1344

53 West Road
Canterbury, NH 03224
Phone: (603)783-9097
E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

(1-8)

RP190627023

Date Rec'd: 6/11/19 Time Rec'd: 1646 Temp Rec'd: 8.5
Rec'd by: Cooler: Y N Location: Ice: Y N
Chlorine: Pos Neg NA
Bottle: TC MIN 40ML HCL LC OTHER

Turnaround Requirements (check one)

Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge a rush fee. Please call ahead.

Rush Samples Need Prior Approval

- [ ] Same Day Turnaround
- [ ] One Day Turnaround
- [ ] Two Day Turnaround
- [ ] Three Day Turnaround
- [x] Normal Turnaround

Project Information

Project #: 95160.00
Project Name: Londonderry WQ Eval.
Town/Site: Londonderry, NH
Sampler: R. Rizza
Company: Nobis Group
Bid Reference:

Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4182
E-mail: MHenderson@Nobis-Group.com

Sample Information

Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs: VOCs EPA 8260B/8260C Select Parameter only: ____	VOCs: VOCs EPA 524.2 Drinking Water Select Parameter only: ____	VOCs: 1,4-dioxane / EDB 8260B SIM low level	SVOCs: SVOCs EPA 8270C/8270D Full list / PAH only	SVOCs: PCB Aroclors EPA 8082A / 608	SVOCs: Pesticides EPA 8081B / 608	SVOCs: Herbicides EPA 8151A	SVOCs: Drinking Water SOCs (circle) 525.2 / 504.1 / 508 / 515.1	Petroleum: TPH Fuel Oil 8100M Diesel Range Organics	Petroleum: TPH Gasoline 8015B Gasoline Range Organics	Petroleum: MADEP EPH	Petroleum: MADEP VPH	Petroleum: Petroleum Fingerprint Analysis	Metals: RCRA8 metals (circle) Total / Dissolved	Metals: Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolved	Metals: Sodium / Calcium / Magnesium Total / Dissolved	Metals: Additional Metals (Total / Dissolved):	Wet Chemistry / Inorganics: EPA 300.0: Chloride / Sulfate Bromide / Nitrate / Nitrite Fluoride	Wet Chemistry / Inorganics: pH / Spec Con / Alkalinity (circle analysis requested)	Wet Chemistry / Inorganics: EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	Wet Chemistry / Inorganics: EPA 314.0: Perchlorate	Wet Chemistry / Inorganics: Closed-Cup Flashpoint / EPA 1010A Ignitability	Wet Chemistry / Inorganics: EPA 1664A HEM Oil and Grease	Wet Chemistry / Inorganics: Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)	Wet Chemistry / Inorganics: TCLP (please also check off the required analyses)	Total Phosphorus	Aquarian ID
NOB-062 5 Allison Ln.	6-11-19/0830	DW	1														X				X								1
NOB-063 29 Beacon St.	6-11-19/1015	DW	1														X				X								2
NOB-064 68 Alexander Rd	6-11-19/1055	DW	1														X				X								3
NOB-065	6-11-19/1325	SW	2														X											X	4
NOB-066	6-11-19/1410	SW	2														X											X	5
NOB-067	6-11-19/1445	SW	2														X											X	6
NOB-068	6-11-19/1520	SW	2														X											X	7
NOB-069	6-11-19/1550	SW	2														X											X	8

Relinquished by:	Date/Time:	Received by:
[signature]	6/11/19 1646	[signature]
Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Receipt Conditions (laboratory use only):

Laboratory Supplied Containers? Yes / No
Containers Intact/Properly Labeled? Yes / No
Were samples delivered on ice? Yes / No
Receipt Temperature: 8.5 C

PROJECT REQUIREMENTS (Please complete):

ISO 17025 accreditation required? ____Yes____No
EDD required? ____Yes____No
MCP Compliance required? ____Yes____No
Is this NH "Odd Fund" related? ____Yes____No
Does a price quote apply? ____Yes____No

FRM-AQ-SAMPLESUBMISSIONFORM-030916

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Monday, June 24, 2019
Derek S. Bennett
NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95
Concord NH 03302-0095

Project Name: MTBE_01
Project #: DWGTF Londonderry
Project Location: Londonderry, NH
Control #: 19060219

Lab ID: 19060219
Date Received: 6/13/2019

Dear Derek S. Bennett

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample. If unpreserved vials were not submitted for these additional analysis then acrolein and 2-CEVE are reported as estimated due to not meeting method requirements for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Jay Chrystal - President/Laboratory Director

Certificate Number 1008

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location: Londonderry, NH

Lab ID: 19060219
Date: 6/24/2019

Lab ID: 19060219

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	Yes
Was there evidence of cooling if not submitted the same day as sampling?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Where applicable; were chemical and micro samples received at correct temps.	Yes

Sample	Method	Client Identity	Matrix	Analyst
19060219-001	EPA 524.2	NOB_062	Drinking water	LauraB

Comment: no comment

**** Blank comment sections denote "No Comment"***

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Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

NHDES MtBE Remediation Bureau
Derek S. Bennett
29 Hazen Drive, PO Box 95
Concord NH 03302-0

Control #: 19060219
Project Number: DWGTF Londonderry
Project Name: MTBE_01
Project Location:

Analytical Results

Lab ID: 19060219
Date: 6/25/2019

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-006	NOB_067	6/11/2019 2:45:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachloroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropropene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobenzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenzene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
2-Methoxy-2-Methyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Methyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propanol (TBA)	SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentanone	SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acrolein	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Acrylonitrile	SW 8260C	< 5 ug/L			6/17/2019	5	LauraB
Benzene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Bromobenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromethane	SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB

317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
19060219-006	NOB_067	6/11/2019 2:45:00 PM	Groundwater

Parameter	Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrachloride	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Chlorobenzene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Chloroethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Chloroform	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Chloromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Cis-1,2-Dichloroethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloromethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoromethane	SW 8260C	< 1 ug/L	1400		6/17/2019	1	LauraB
Diethyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Di-Isopropyl Ether	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene	SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobutadiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
M/P-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Methylene Chloride	SW 8260C	< 5 ug/L	5		6/17/2019	5	LauraB
Naphthalene	SW 8260C	< 1 ug/L	140		6/17/2019	1	LauraB
N-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene	SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	SW 8260C	< 12 ug/L	1300		6/17/2019	12	LauraB
Toluene	SW 8260C	< 1 ug/L	1000		6/17/2019	1	LauraB
Trans-1,2-Dichloroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichloropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoromethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB

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Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

MCL is the Maximun Contaminant Level allowed. Any result exceeding the MCL is considered unsatisfactory.

Total Trihalomethane MCL is 80ug/l.

The Perchlorate MCL of 2.0ug/l is based on the Massachusetts Department of Environmental Protection.

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.