

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:

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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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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.

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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

VOCs

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.

PFAS

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

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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 Conce	entration (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/nitrite 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.

TABLE 1 SUMMARY OF DRINKING WATER PFAS ANALYSES

Drinking water Sampling Program Londonderry, New Hampshire Nobix Project No. 95160.00

PER- AND POLYFLUOROAL 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- methylperflourooctanesulfonamideoac etic 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	(/5 /2010	2.45		2.0	2.2	22	2					I 2		2.00	2	0.51	2		<10	2	2
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	2.51	<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	3.31	<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

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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	2.31	<1.8	<1.8	<9.2	<1.8	<1.8
District 4	1																				
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	3.61	<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	4.91	<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	4.31	<1.9	<1.9	2.3JB	<1.9	<1.9
District 5	1											 		 							
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

Town of Londonderry Water Quality Survey File No. 95160.00

TABLE 1 SUMMARY OF DRINKING WATER PFAS ANALYSES

Drinking water Sampling Program Londonderry, New Hampshire Nobix Project No. 95160.00

PER- AND POLYFLUOROAL SUBSTANCES (PFAS)	-KYL	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- methylperflourooctanesulfonamideoac etic 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	2.81	<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	7.51	<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	2.81	<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

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	/ /5 /0010	1 4	0.01	0.001	0.010	0.001	0.01	0.010	0.0004	0.01	0.01	20
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

Water Quality Sampling Program Londonderry, New Hasmpshire Nobis Project Nol 95160.00

NHDES AGQS**		O Nitrate	1 Nitrite	0.0 Arsenic	5 Barium	Cadmium 10.0	Chromium 0.10	C.015	Mercury 0.002	O. Selenium	Silver 0.1	o Methyl tert Butyl Ether (MTBE)/Total VOCs
	Date											l
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

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

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:

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- 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.

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- 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 - Chro		ns	ns	0.15	ns	0.00021	0.0198	0.00041	0.00077	0.005	ns	*	ns
Freshwater Aquatic - Acu		ns	ns	0.34	ns	0.00039	0.152	0.01	0.0014	ns	0.0002		ns
Human Health Water & Fish In	gestion	10	ns	18 ng	1	ns 0.01	ns	ns	0.00005	0.17	0.105	ns	ns
NHDES AGQS** Location	Date	10	1	0.01	2	0.01	0.10	0.015	0.002	0.05	0.1	ns	ns
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

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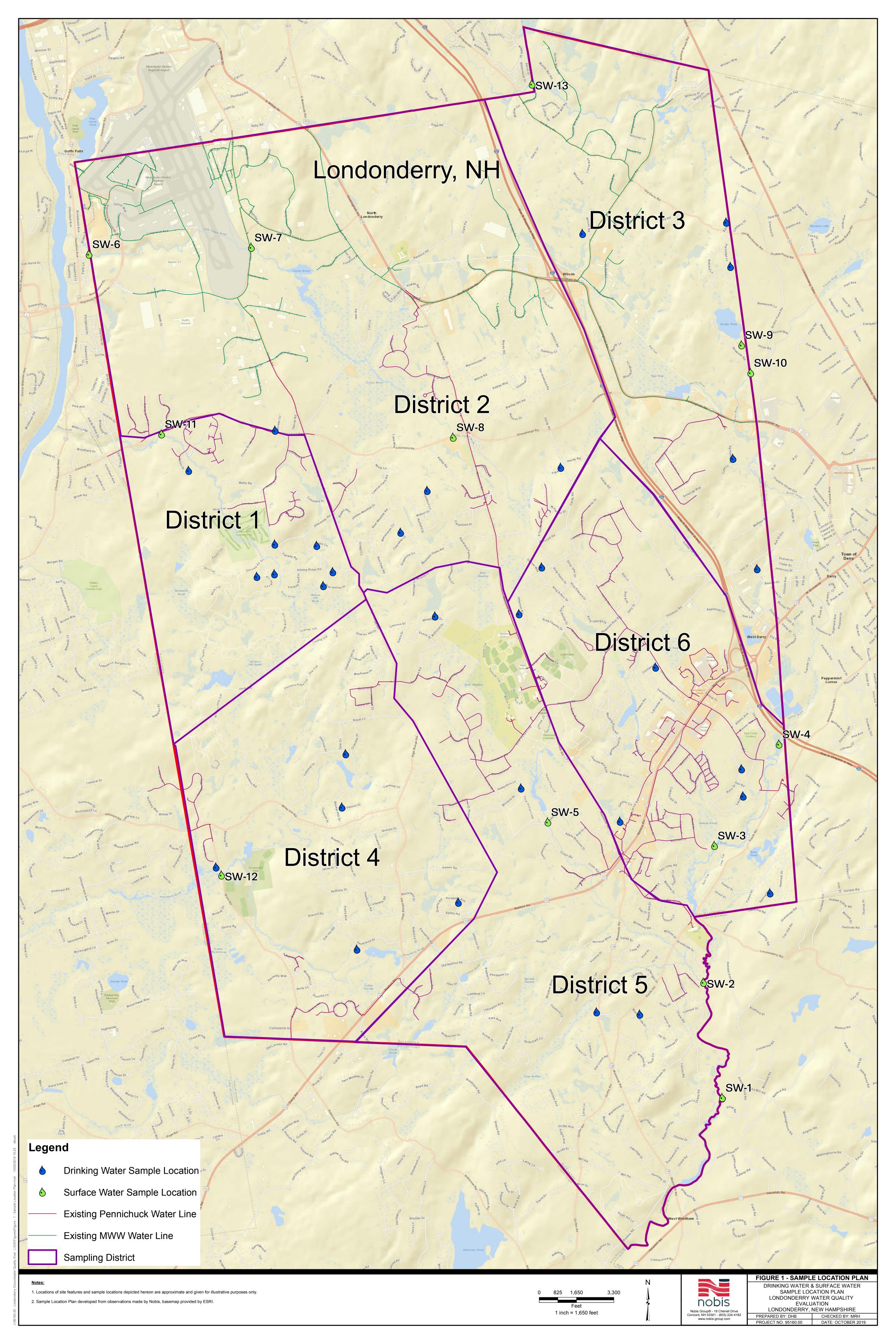
TABLE 4 SUMMARY OF SURFACE WATER PFAS ANALYSES Water Quality Sampling Program Londonderry, New Hampshire Nobis Project No. 95160.00

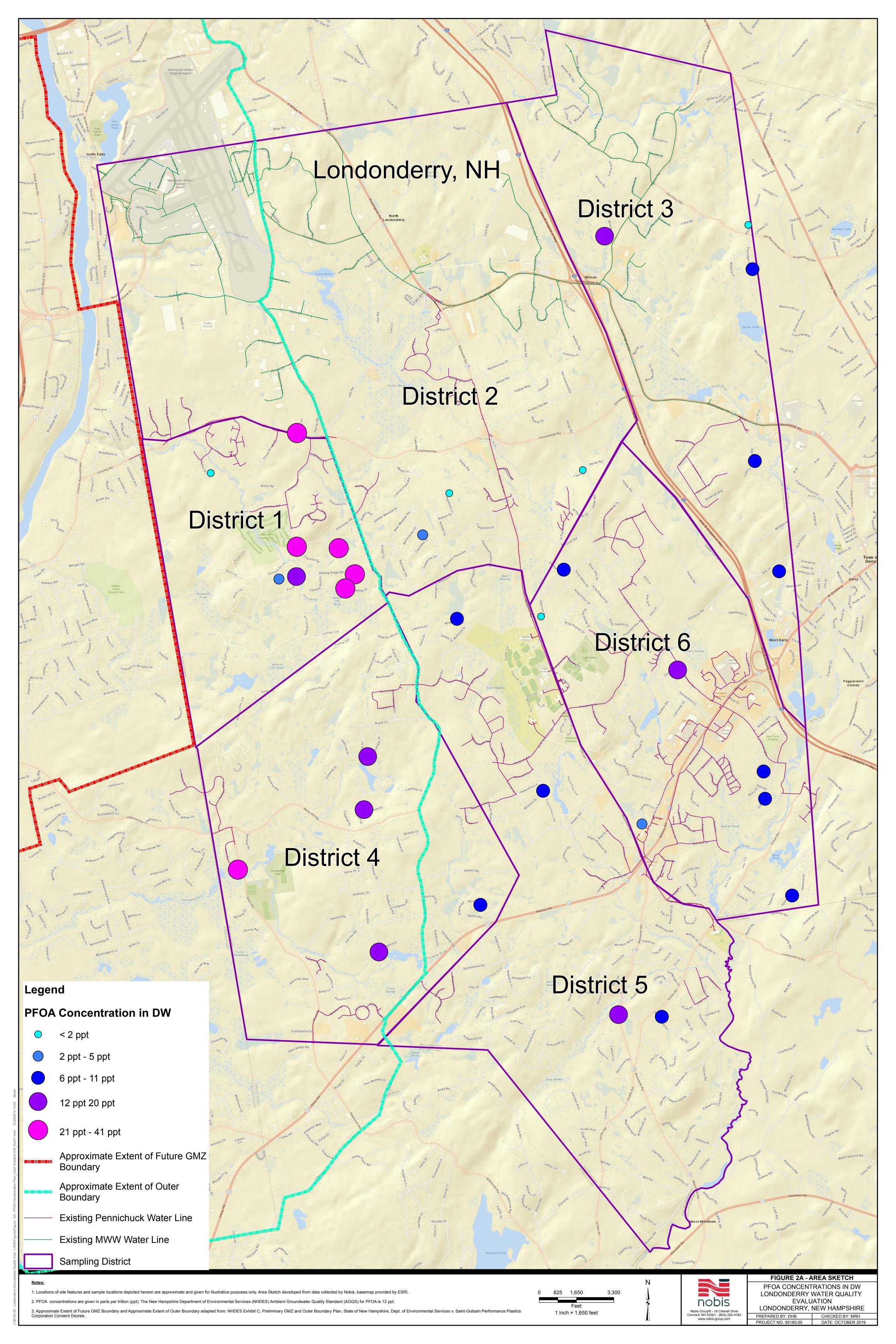
PER- AND POLYFLUOROALK SUBSTANCES (PFAS)	ζΥL	Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	Perfluorohexanoic Acid (PFHxA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorononanoic Acid (PFNA)	Perfluorodecanoic Acid (PFDA)	Perfluoroundecanoic Acid (PFUnA)	Perfluorododecanoic 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	4.11	<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	5.01	<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

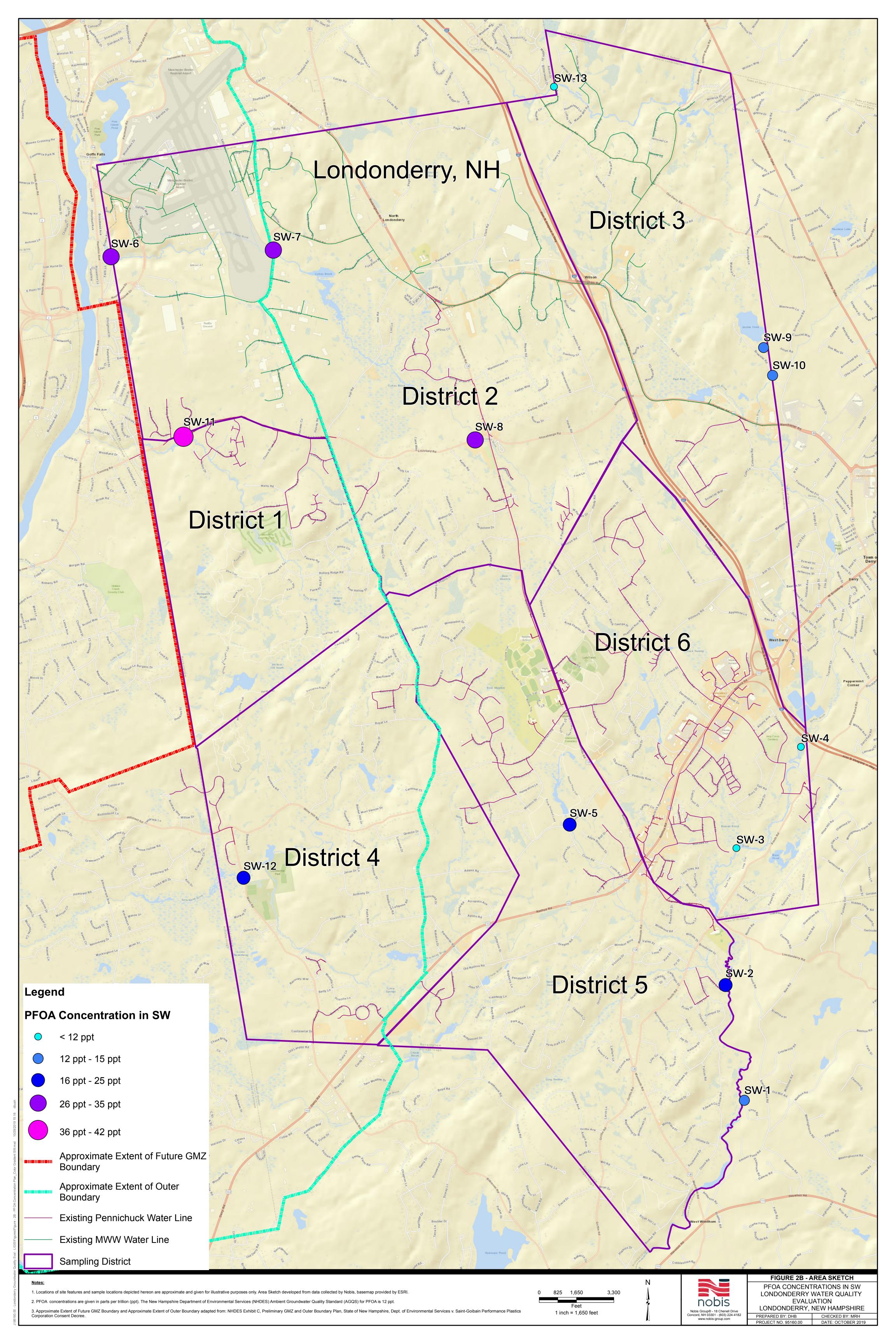
Notos:

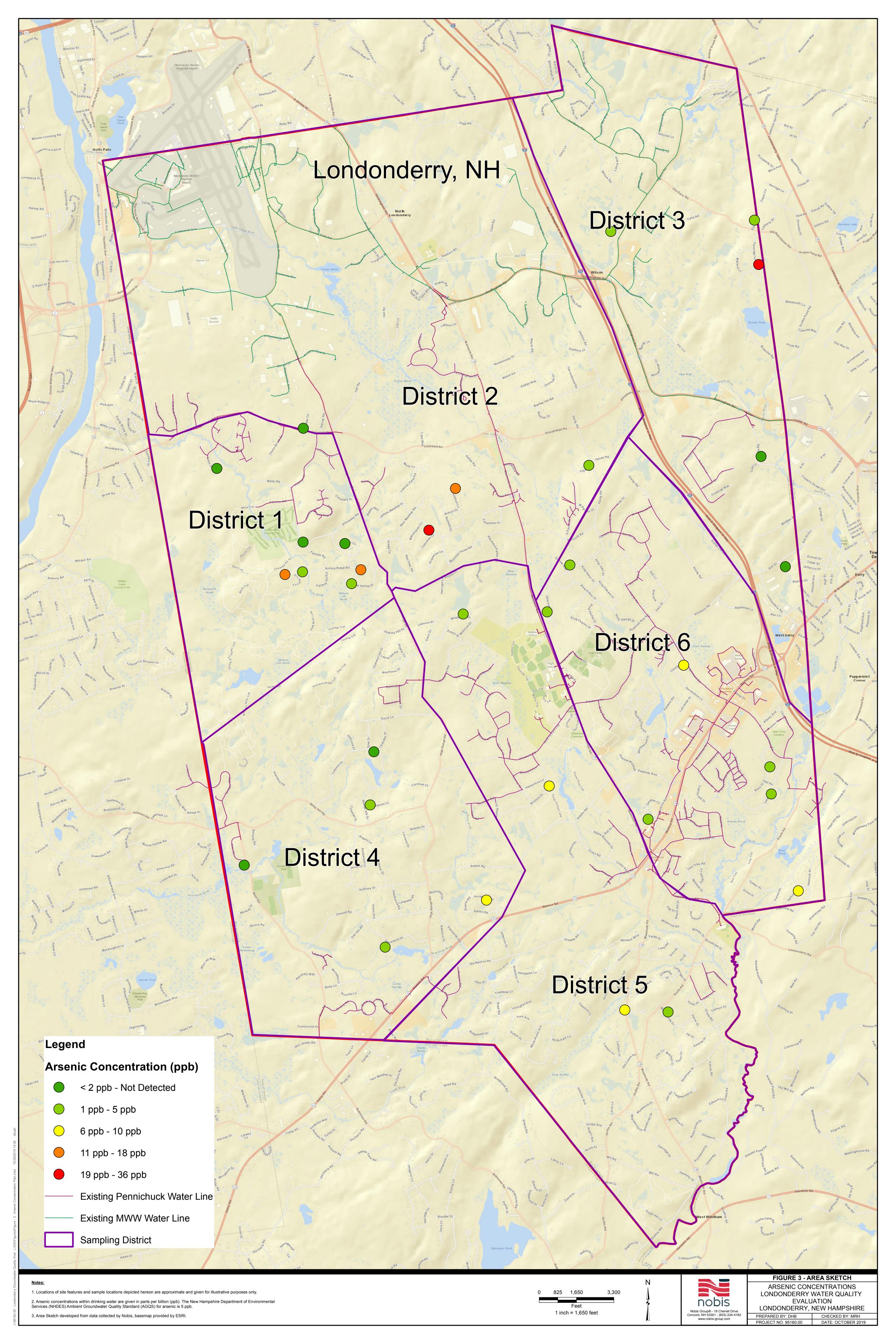
- 1. All samples were collected by Nobis Group on the dates indicated.
- 2. All concentrations are reported in ng/L, equivalent to parts per trillion (ppt), except where indicated.
- 3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in Bold indicate 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









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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®.



317 Elm Street Milford, NH 03055 (603) 673-5440

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

Lab ID: 19050127

Date Received: 5/7/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050127

Lab ID: 19050127 **Date:** 5/20/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry

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"



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

NHDES MtBE Remediation Bureau

Analytical Results

Lab ID:

Date:

Derek S. Bennett

Control #: 19050127 19050127

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

5/21/2019

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: 199 NE Hollow Dr Londonderry NH

Sample Client Sample Ide		у			Start Date/T	ime Sampled:	Ма	atrix
19050127-004	NOB_041				5/2/201	9 12:50:00 PM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	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-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethyll	1,3,5-Trimethylbenzene		< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorober	1,3-Dichlorobenzene		< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropro	1,3-Dichloropropane		< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorober	1,4-Dichlorobenzene		< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropro	2,2-Dichloropropane		< 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-Met	2-Ethoxy-2-Methyl Propane (ETBE)		< 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Prop	panol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	Э	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltolue	ene	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			< 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 Disulfid	Carbon Disulfide		< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrach		EPA 524.2 EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
	Chlorobenzene		< 0.5 ug/L	100		5/16/2019	0.5	LauraB
		EPA 524.2	ŭ			1	Dogo 1 of	

Page 1 of 3



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

19050127-004 Parameter Chloroethane Chloroform Chloromethane	NOB_041	Method	_		5/2/201	9 12:50:00 PM	Drinki	ng water
Chloroethane Chloroform		Method					Dillina	ing water
Chloroform			Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
		EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Chloromethane		EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
		EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Cis-1,2-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethan	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethe	ene	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
Trichlorofluoron	nethane	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



Qualifier:

Description:

317 Elm Street
Milford, NH 03055
(603) 673-5440
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3-	Method blank contaminated with target analyte.
31-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
32-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
3-	Reporting limit elevated due to matrix interference.
- -	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
L-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
H-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
_H-	Laboratory control spike(s) was high. Results may be biased high.
L-	Laboratory control spike(s) was low. Results may be biased low.
ИН-	Matrix spike recovery high due to matrix. Results may be biased high.
ΛL-	Matrix spike recovery low due to matrix. Results may be biased low.
٧-	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.
₹-	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
J-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
/-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
7	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: 320-50156-4

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

LINKS

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Have a Question?



Visit us at: www.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.

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

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Toxicity Equivalent Quotient (Dioxin)

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

Qualifiers

L	C	V	S

TEQ

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
1	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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

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

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 1.6° 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

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

Client Sample ID: NOB_041

Lab Sample ID: 320-50156-

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.2 B	1.9	0.33 ng/L		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 na/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-4

Project/Site: TrustFund_Londonderry SDG: 19 Pine Hollow Dr - Londonderry, NH

Client Sample ID: NOB_041

Lab Sample ID: 320-50156-4 Date Collected: 05/02/19 12:50 **Matrix: Water**

Date Received: 05/11/19 14:44

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	4.2	В	1.9	0.33	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluoropentanoic acid (PFPeA)	3.9		1.9	0.46	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorohexanoic acid (PFHxA)	5.5		1.9	0.55	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluoroheptanoic acid (PFHpA)	5.3		1.9	0.24	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorooctanoic acid (PFOA)	23		1.9	0.80	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorononanoic acid (PFNA)	0.42	J	1.9	0.25	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorobutanesulfonic acid (PFBS)	3.3		1.9	0.19	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorohexanesulfonic acid (PFHxS)	1.9	В	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorooctanesulfonic acid (PFOS)	3.3	I	1.9	0.51	ng/L		05/16/19 09:47	05/26/19 22:47	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 22:47	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			05/26/19 22:47	
6:2 FTS	ND		9.4		ng/L		05/16/19 09:47	05/26/19 22:47	
8:2 FTS	ND		1.9		ng/L			05/26/19 22:47	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/16/19 09:47	05/26/19 22:47	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	87		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C5 PFPeA	95		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C2 PFHxA	91		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C4 PFHpA	92		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C4 PFOA	99		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C5 PFNA	96		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C2 PFDA	101		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C2 PFUnA	104		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C2 PFDoA	101		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C2 PFTeDA	96		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C3 PFBS	100		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C2 PFHxDA	59		50 - 150				05/16/19 09:47	05/26/19 22:47	
1802 PFHxS	97		50 - 150				05/16/19 09:47	05/26/19 22:47	
13C4 PFOS	96		50 - 150				05/16/19 09:47	05/26/19 22:47	
d3-NMeFOSAA	95		50 - 150				05/16/19 09:47	05/26/19 22:47	
M2-6:2 FTS	88		50 - 150				05/16/19 09:47	05/26/19 22:47	
M2-8:2 FTS	106		50 ₋ 150				05/46/40 00:47	05/26/19 22:47	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-4

Project/Site: TrustFund_Londonderry 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

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50156-4	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Eurofins TestAmerica, Sacramento

5/30/2019

Lab Sample ID: MB 320-294903/1-A

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

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

Client	Sample	ID:	Method	Blank
0110116	Gampio		mounou	-iaiii

Prep Type: Total/NA

Matrix: Water Prep Batch: 294903 **Analysis Batch: 297148**

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MD	MD							

Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89 ng/L	05/16/19 09:47	05/26/19 21:03	1
(FFIXDA)	MB	МВ					
Isotope Dilution	%Recovery	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
1802 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						Prep Type: Total/NA
Analysis Batch: 297148						Prep Batch: 294903
	Spike	LCS	LCS			%Rec.
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L	103	70 - 130

Client Sample ID: Lab Control Sample

Page 8 of 17

QC Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-4

Project/Site: TrustFund_Londonderry SDG: 19 Pine Hollow Dr - Londonderry, NH

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

Lab Sample ID: LCS 320-294903/2-A			Client Sample ID: Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 297148			Prep Batch: 294903
-	Spike	LCS LCS	%Rec.

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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	40.0	39.3		ng/L		98	72 - 132	

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

5/30/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-294903/3-A

Matrix: Water

(PFHxDA)

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

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

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

matrix rrater								PO O.	
Analysis Batch: 297148							Prep Ba	atch: 29	
	Spike		LCSD				%Rec.		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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	40.0	41.2		ng/L		103	72 - 132	5	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Job ID: 320-50156-4 Project/Site: TrustFund_Londonderry 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

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

Client Sample ID: NOB_041

Lab Sample ID: 320-50156-4

Matrix: Water

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perflu	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

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

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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	

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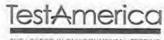
4.0

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

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Client Information	Sampler:	VARUS.	515 11		PM:	, Orle	ette S	Carrier Tracking No(s):		COC No:
Glient Contact: Derek Bennett	Phone:			E-M		hnso	on@testamericainc.com			Page:
Company:	-			950	T			Degreeted		Job #:
New Hampshire Dept of Environ Services Address:	Due Date Request	ed:	_		1		Analysis	Requested		Preservation Codes:
29 Hazen Drive	TAT Requested (da	uic).			41					A - HGL M - Hexane
City: Concord		iys).				S	(es)			B - NaOH N - None C - Zn Acetate D - AsNaO2
State, Zip: NH, 03302	Standard TAT						Slandard List (2 O Analyles)			D - Nitrio Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
Phone; (603) 271-8520	PO#: Purchase Order	not require	d		(0		ist (2 1			F - MeOH R - Na2S2O3 G - Amothor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email: derek.bennett@des,nh.gov	wo #: Pay using 3904				or N	(ON	and I		0	I - Ice U - Acetone J - DI Water V - MCAA
Project Name:	Project #:				٦٥١	or	Stano		containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
TrustFund_Londonderry Site:	SSOW#:	_	_		- ld	SD (Yes	PFAS,		cont	Other:
Londonderry, NH						MSD	a (i)		70	
		Sample	Sample Type (C=comp,	Matrix (W=water, Sesolid, O=waste/oil,	Field Filtered	m.o	PFC_IDA - (MOD)		Total Number	
Sample Identification	Sample Date	Time		BT=Tissue, A=Ai	THE STATE OF THE S	Ž.	<u>a</u>		1 F	Special Instructions/Note:
FIELD BLANK	5/2/19	0300	6	DU	M		X			
NOB-039, 460HessanRd, Londanderry, MH	74.4	1125	6	DW	W)	x			
NOB-040 GTG-LCBEASTRE LOWER ANDERSY AV	5/2/19	1220	G	DW	M	>	×			
NOB-041,19HO-ON-HOLDS, LONDONDERPY, NH	5/2/19	1250	6	Da	W	1	x			
			6	DW	N		×			
NOB-042, IS PARTE IDGGLN, LONDON DEDON NA NOB-043, 216 AWSON FARMED, LONDON DERRY	VH 5/2/19	14120	G	ENTE	M		X			
					H				-	
* Use churches before first com	mc es s	tohon	1D*		H				4	
					H	2	320-50156 Chain of Cus	tody	-	
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poiso Deliverable Requested: 1, II, III, IV, Other (specify)	n B Unkno	own \square_F	Radiological				ple Disposal (A fee may Return To Client	be assessed if samples a Disposal By Lab ements:	re retaine Archi	
Empty Kit Relinquished by:	-	Date:			Tim	ie:	00 0	/ Method of Shipment:	-	
Relinquished by:	Date/Time:			Company	-		MADES COLD SX	1- Date/Time	-1-1	Company
General Festivi)	5/3/F1 Date/Time:	0930)	Company		H	leceived by:	ryc (5.1°C)	>/3/	19 9:30 NHDES
Stram.	5/7/19	14:10		DES		1	Shiloan color	2.90 5/7	/19 /	4110 DES
Rejurguened by:	Date/Time:			Company		H	eceived by	Date/Time 5/9	119	900 ETA-SAC
Custody Seal No.: 800	0016					Co	cocler Temperature(s) "C and Off	her Remarks:	.6.0	/

Page 16 of 17

Job Number: 320-50156-4

SDG Number: 19 Pine Hollow Dr - Londonderry, NH

Login Number: 50156 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Nelson, Kym D

oreator. Neison, Nym D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:		Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		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:



NELSON ANALYTICAL LAB

RP190513098

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

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

Date Reported :

13-May-19 17:18

REPORT OF ANALYSIS

119050295.03

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

sampled Date: 02-May-2019 12:50

Nitrate

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

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
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: Temp R A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Londonburry & Oudity Eval

Town/Site: Londonburry Please inquire about Same Day Turnaround Project Manager: Mark Manderson
Report To: Mark Menderson
Invoice To: Mccounts Payable
Phone: 603-224-4182
E-mail: Menderson Ender-Grove.com rush service. If we are able to meet your rush One Day Turnaround needs with reasonable Two Day Turnaround effort, we will not charge Sampler: Karl Karlsion a rush fee. Please call Three Day Turnaround Company: Nabis - Gron ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics # Of Containers
VOCs EPA 82808/8280C
Select Parameter only.
VOCs EPA 524.2 Drinking W
Select Parameter only.
1/4-dioxane / EDB
8260B SIM low level
8200S EPA 8270C/8270D
FULL RIST / PAH only All samples taken 5/2 per K. Karlson Date of the collection of the Sample ID NOB- 039, Hotterson, Landersking, Ath Aquarian ID 0 Relinguished by: Date/Time: \$/3/19 * Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete):

Laboratory Supplied Containers Yes No

Were samples delivered on ice?: Yes / No.

Containers Intact/Properly Labeled?: (Tes. / No

ISO 17025 accreditation required? _____Yes___

Is this NH "Odd Fund" related?

EDD required? ____Yes____No

MCP Compliance required? ____Yes___

Relinquished by:

Relinquished by:

+see attached

Received by:

Date/Time:



317 Elm Street Milford, NH 03055 (603) 673-5440

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

Lab ID: 19050127

Date Received: 5/7/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19050127

Lab ID:

Date:

19050127 5/20/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Project Name:

MTBE_01

Project Location: Londonderry

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"



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

NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19050127

Lab ID: 19050127

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

5/21/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 15 Partridge Ln Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ntrix
19050127-005	NOB_042			,	5/2/201	9 1:50:00 PM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Chlorotoluene	9	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Ethoxy-2-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Prop	panol (TBA)	EPA 524.2	< 12 ug/L			5/16/2019	12	LauraB
4-Chlorotoluene	9	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
4-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloron	methane	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 Disulfid	le	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrach		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
			ŭ			1	Dogo 1 of	

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ма	atrix
19050127-005	NOB_042				5/2/201	9 1:50:00 PM	Drinki	ing 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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloro	propene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloron	nethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethan	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ket	one (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofuran	1	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-Dichle	oroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichle	oropropene	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
Trichlorofluorom	nethane	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
(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.



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

LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.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.

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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

LC	MS

RPD

TEF

TEQ

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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.
n	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

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

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 1.6° 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

Job ID: 320-50156-5 Project/Site: TrustFund_Londonderry 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	В	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	JB	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.82	JI	1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

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

Client Sample ID: NOB_042

Lab Sample ID: 320-50156-5 Date Collected: 05/02/19 13:50 **Matrix: Water**

Date Received: 05/11/19 14:44

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	3.4	В	1.9	0.34	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluoropentanoic acid (PFPeA)	2.1		1.9	0.47	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorohexanoic acid (PFHxA)	3.0		1.9	0.56	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluoroheptanoic acid (PFHpA)	1.8	J	1.9	0.24	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorooctanoic acid (PFOA)	7.3		1.9	0.82	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorobutanesulfonic acid (PFBS)	9.4		1.9	0.19	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorohexanesulfonic acid (PFHxS)	0.68	JB	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorooctanesulfonic acid (PFOS)	0.82	JI	1.9	0.52	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/16/19 09:47	05/26/19 22:55	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			05/26/19 22:55	
6:2 FTS	ND		9.7		ng/L		05/16/19 09:47	05/26/19 22:55	
8:2 FTS	ND		1.9	0.36	ng/L		05/16/19 09:47	05/26/19 22:55	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		05/16/19 09:47	05/26/19 22:55	
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	72		50 - 150				05/16/19 09:47	05/26/19 22:55	
13C5 PFPeA	86		50 - 150				05/16/19 09:47	05/26/19 22:55	
13C2 PFHxA	86		50 - 150				05/16/19 09:47	05/26/19 22:55	
13C4 PFHpA	91		50 - 150				05/16/19 09:47	05/26/19 22:55	
13C4 PFOA	97		50 - 150				05/16/19 09:47	05/26/19 22:55	
13C5 PFNA	94		50 ₋ 150				05/16/19 09:47	05/26/19 22:55	
13C2 PFDA	96		50 - 150				05/16/19 09:47	05/26/19 22:55	
13C2 PFUnA	92		50 ₋ 150				05/16/19 09:47	05/26/19 22:55	
13C2 PFDoA	91		50 - 150					05/26/19 22:55	
13C2 PFTeDA	87		50 - 150					05/26/19 22:55	
13C3 PFBS	93		50 ₋ 150					05/26/19 22:55	
13C2 PFHxDA	43	*	50 ₋ 150					05/26/19 22:55	
1802 PFHxS	91		50 ₋ 150					05/26/19 22:55	
13C4 PFOS	85		50 - 150 50 - 150					05/26/19 22:55	
d3-NMeFOSAA	83		50 - 150 50 - 150					05/26/19 22:55	
M2-6:2 FTS	87		50 - 150 50 - 150					05/26/19 22:55	
	0/						UJ/10/19 US 4/	UU/ZU/19 ZZ.00	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

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

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50156-5	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

5/31/2019

Lab Sample ID: MB 320-294903/1-A

Matrix: Water

Analysis Batch: 297148

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

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

Client	Sample	ID:	Method	Blank

Prep Type: Total/NA

Prep Batch: 294903

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

,	MB	MB				
Isotope Dilution	%Recovery	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
1802 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: LGS 320-294903/2-A				Cilen	t Sai	пріе ір	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 297148							Prep Batch: 294903
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Eurofins TestAmerica, Sacramento

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Lab Sample ID: LCS 320-294903/2-A

Matrix: Water

Perfluoroheptanesulfonic Acid

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

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

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

107

68 - 128

Prep Batch: 294903 Analysis Batch: 297148 LCS LCS Spike %Rec. Result Qualifier Added Analyte Unit %Rec Limits Perfluoropentanoic acid (PFPeA) 40.0 36.3 91 66 - 126 ng/L 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 40.0 Perfluorodecanoic acid (PFDA) 41.9 105 69 - 129 ng/L 40.0 45.6 114 60 - 120 Perfluoroundecanoic acid ng/L (PFUnA) 40.0 44.3 Perfluorododecanoic acid ng/L 111 71 - 131 (PFDoA) 40.0 44.0 ng/L 110 72 - 132 Perfluorotridecanoic acid (PFTriA) 40.0 38.1 ng/L 95 68 - 128Perfluorotetradecanoic acid (PFTeA) 35.4 36.9 104 ng/L 73 - 133 Perfluorobutanesulfonic acid (PFBS) 36.4 34.8 ng/L 96 63 - 123 Perfluorohexanesulfonic acid (PFHxS)

(PFHpS)					
Perfluorooctanesulfonic acid	37.1	37.4	ng/L	101	67 - 127
(PFOS)					
Perfluorodecanesulfonic acid	38.6	40.5	ng/L	105	68 - 128
(PFDS)					
N-methylperfluorooctanesulfona	40.0	42.2	ng/L	106	67 - 127
midoacetic acid (NMeFOSAA)					
6:2 FTS	37.9	41.5	ng/L	109	66 - 126

38.1

40.7

ng/L

8:2 FTS	38.3	41.1	ng/L	107	67 - 127
Perfluoro-n-hexadecanoic acid	40.0	39.3	ng/L	98	72 - 132
(PFHxDA)					

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

5/31/2019

Lab Sample ID: LCSD 320-294903/3-A

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

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

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

Matrix: Water Analysis Batch: 297148	Spike	LCSD	LCSD		•		Prep Ty Prep Ba %Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

40.0

41.2

ng/L

103

72 - 132

Isotope Dilution	%Recovery	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

LCSD LCSD

Perfluoro-n-hexadecanoic acid

(PFHxDA)

M2-8:2 FTS

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

105

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50 - 150

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QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-5 Project/Site: TrustFund_Londonderry 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

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

Client Sample ID: NOB_042

Date Received: 05/11/19 14:44

Lab Sample ID: 320-50156-5 Date Collected: 05/02/19 13:50 **Matrix: Water**

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perflu	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	Perfluoroheptanoic acid (PFHpA)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	xA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-5 Project/Site: TrustFund_Londonderry 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

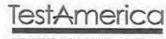
Job ID: 320-50156-5

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	

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

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information	ion Sampler: Lab PM: k kric VARLSSO W Johnso			on, Oriette S				COC No:				
Glient Contact: Derek Bennett	Phone:			E-M		hnso	on@testamericainc.com			Page:		
Company:	-			950	T			Degreeted	Job #:			
New Hampshire Dept of Environ Services Address:	Due Date Requeste	ed:	_		1		Analysis	Requested		Preservation Codes:		
29 Hazen Drive	TAT Requested (da	uic).			41					A - HGL M - Hexane		
City: Concord		iys).				S	(es)			B - NaOH N - None C - Zn Acetate D - AsNaO2		
State, Zip: NH, 03302	Standard TAT						Slandard List (2 O Analyles)			D - Nitrio Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3		
Phone; (603) 271-8520	PO#: Purchase Order	not require	d		(0		ist (2 1			F - MeOH R - Na2S2O3 G - Amothor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate		
Email: derek.bennett@des,nh.gov	wo #: Pay using 3904				or N	(ON	and I		0	I - Ice U - Acetone J - DI Water V - MCAA		
Project Name:	Project #:				٦٥١	or	Stano		containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)		
TrustFund_Londonderry Site:	SSOW#:	_	_		- ld	SD (Yes	PFAS,		cont	Other:		
Londonderry, NH						MSD	a (i)		70			
		Sample	Sample Type (C=comp,	Matrix (W=water, Sesolid, O=waste/oil,	Field Filtered	m.o	PFC_IDA - (MOD)		Total Number			
Sample Identification	Sample Date	Time		BT=Tissue, A=Ai	THE STATE OF THE S	Ž.	<u>a</u>		1 F	Special Instructions/Note:		
FIELD BLANK	5/2/19	0300	6	DU	M		X					
NOB-039, 460HessanRd, Londanderry, MH	74.4	1125	6	DW	W)	x					
NOB-040 GTG-LCBEASTED LOW ANDERSY AV	5/2/19	1220	G	DW	M	>	×					
NOB-041,19HO-ON-HOLDS, LONDONDERPY, NH	5/2/19	1250	6	Da	W	1	x					
			6	DW	N		×					
NOB-042, IS PARTE IDGGLN, LONDON DEDON NA NOB-043, 216 AWSON FARMED, LONDON DERRY	VH 5/2/19	14120	G	ENTE	M		X					
					H	-			-			
* Use churches before first com	mc es s	tohon	1D*		H				4			
					H	2	320-50156 Chain of Cus	tody	-			
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poiso Deliverable Requested: 1, II, III, IV, Other (specify)	n B Unkno	own \square_F	Radiological				ple Disposal (A fee may Return To Client	be assessed if samples a Disposal By Lab ements:	re retaine Archi			
Empty Kit Relinquished by:	-	Date:			Tim	ie:	00 0	/ Method of Shipment:	-			
Relinquished by:	Date/Time:			Company	-		MADES COLD SX	1- Date/Time	-1-1	Company		
General Festivi)	5/3/F1 Date/Time:	0930)	Company		H	leceived by:	ryc (5.1°C)	>/3/	19 9:30 NHDES		
Stram.	5/7/19	14:10		DES		1	Shiloan color	2.90 5/7	/19 /	4110 DES		
Rejurguened by:	Date/Time:			Company		H	eceived by	Date/Time 5/9	119	900 ETA-SAC		
Custody Seal No.: 800	06016			Co	Cooler Temperature(s) "C and Other Remarks: 1.6*C			/				

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Ver: 08/04/2016



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

Login Number: 50156 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Nelson, Kym D

Client: New Hampshire Dept of Environmental Serv

oreator. Neison, Kyni D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or ampered 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	
s the Field Sampler's name present on COC?	False	
There are no discrepancies between the sample IDs on the containers and he 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	
f 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	

Eurofins TestAmerica, Sacramento



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:		Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		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:



NELSON ANALYTICAL LAB

RP190513098

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

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

Date Reported :

13-May-19 17:18

REPORT OF ANALYSIS

119050295.04

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

sampled Date: 02-May-2019 01:50

Nitrate

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

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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: Temp R A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Londonburry & Oudity Eval

Town/Site: Londonburry Please inquire about Same Day Turnaround Project Manager: Mark Manderson
Report To: Mark Menderson
Invoice To: Mccounts Payable
Phone: 603-224-4182
E-mail: Menderson Ender-Grove.com rush service. If we are able to meet your rush One Day Turnaround needs with reasonable Two Day Turnaround effort, we will not charge Sampler: Karl Karlsion a rush fee. Please call Three Day Turnaround Company: Nabis - Gron ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics # Of Containers
VOCs EPA 82808/8280C
Select Parameter only.
VOCs EPA 524.2 Drinking W
Select Parameter only.
1/4-dioxane / EDB
8260B SIM low level
8200S EPA 8270C/8270D
FULL RIST / PAH only All samples taken 5/2 per K. Karlson Date of the collection of the Sample ID NOB- 039, Hotterson, Landersking, Ath Aquarian ID 0 Relinguished by: Date/Time: \$/3/19 * Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete):

Laboratory Supplied Containers Yes No

Were samples delivered on ice?: Yes / No.

Containers Intact/Properly Labeled?: (Tes. / No

ISO 17025 accreditation required? _____Yes___

Is this NH "Odd Fund" related?

EDD required? ____Yes____No

MCP Compliance required? ____Yes___

Relinquished by:

Relinquished by:

+see attached

Received by:

Date/Time:



317 Elm Street Milford, NH 03055

Lab ID: 19050127

Date Received: 5/7/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

5/20/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050127

Lab ID: 19050127

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01
Project Location: Londonderry

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"



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

NHDES MtBE Remediation Bureau

 Analytical Results

 19050127
 Lab ID: 19050127

Derek S. Bennett

Control #: 19050127 L
Project Number: TrustFund Londonderry D

Date: 5/21/2019

29 Hazen Drive, PO Box 95 Concord NH 03302-0

Project Name: MTBE_01

Project Location: 21 Lawson Farm Rd Londonderry NH

Sample Client Sample Identity	Start Date/1	Time Sampled:	Ма	ntrix		
19050127-006 NOB_043	5/2/201	Drinki	Drinking water			
				Date/Time		
Parameter	Method	Result MCL	Qualifier	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		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		5/16/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L		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
55.5251IZ0110			0.0			

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
19050127-006	NOB_043				5/2/201	9 2:20:00 PM	Drinki	ing 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-Dichlord	pethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	ride	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	e	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethe	ene	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
Trichlorofluoron	nethane	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 (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.
7	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.



Environment Testing TestAmerica

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

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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.

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

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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

	ме
LU	VI O

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
1	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.

TEQ

Toxicity Equivalent Quotient (Dioxin)

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
Percent Recovery
Contains Free Liquid
Contains No Free Liquid
Duplicate Error Ratio (normalized absolute difference)
Dilution Factor
Detection Limit (DoD/DOE)
Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
Decision Level Concentration (Radiochemistry)
Estimated Detection Limit (Dioxin)
Limit of Detection (DoD/DOE)
Limit of Quantitation (DoD/DOE)
Minimum Detectable Activity (Radiochemistry)
Minimum Detectable Concentration (Radiochemistry)
Method Detection Limit
Minimum Level (Dioxin)
Not Calculated
Not Detected at the reporting limit (or MDL or EDL if shown)
Practical Quantitation Limit
Quality Control
Relative Error Ratio (Radiochemistry)
Reporting Limit or Requested Limit (Radiochemistry)
Relative Percent Difference, a measure of the relative difference between two points
Toxicity Equivalent Factor (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

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

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 1.6° 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 Job ID: 320-50156-6

Project/Site: TrustFund_Londonderry 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	В	1.9	0.33	ng/L		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	JI	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	JB	1.9	0.16	ng/L	1	EPA 537(Mod)	Total/NA

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Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 21 Lawson Farm Rd - Londonderry, NH

Client Sample ID: NOB_043

Lab Sample ID: 320-50156-6

Matrix: Water

Job ID: 320-50156-6

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

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.9	В	1.9	0.33	ng/L		05/16/19 09:47	05/26/19 23:03	
Perfluoropentanoic acid (PFPeA)	0.66	J	1.9	0.46	ng/L		05/16/19 09:47	05/26/19 23:03	•
Perfluorohexanoic acid (PFHxA)	0.88	JI	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	JB	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-methylperfluorooctanesulfonamidoa cetic 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	
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	
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	
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	
13C3 PFBS	95		50 - 150				05/16/19 09:47	05/26/19 23:03	1
13C2 PFHxDA	51		50 - 150					05/26/19 23:03	1
1802 PFHxS	89		50 - 150				05/16/19 09:47	05/26/19 23:03	
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	
	108							05/26/19 23:03	1

5/30/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-6

Project/Site: TrustFund_Londonderry 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

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50156-6	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

5/30/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-6

Project/Site: TrustFund_Londonderry 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	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 297148	Prep Batch: 294903
MB MB	1 10p Batom 20-1000

	IVID	IVID							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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	ND		2.0	0.89	ng/L		05/16/19 09:47	05/26/19 21:03	1

(PFHxDA)				•	
,	MB	MB			
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared Analyzed	d 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
1802 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

Matrix: Water						•	Prep Type: Total/NA
Analysis Batch: 297148							Prep Batch: 294903
-	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L	_	103	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 17 5/30/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-6

Project/Site: TrustFund_Londonderry SDG: 21 Lawson Farm Rd - Londonderry, NH

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

Lab Sample ID: LCS 320-294903/2-A	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA

Matrix: Water	Prep Type: Total/NA
Analysis Batch: 297148	Prep Batch: 294903

							%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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	40.0	45.6		ng/L		114	60 - 120	
(PFUnA) Perfluorododecanoic acid (PFDoA)	40.0	44.3		ng/L		111	71 - 131	
Perfluorotridecanoic acid	40.0	44.0		ng/L		110	72 - 132	
(PFTriA)								
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-methylperfluorooctanesulfona midoacetic 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	

(TTINDT)	LCS	LCS	
Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	85		50 - 150
13C5 PFPeA	92		50 - 150
13C2 PFHxA	89		50 - 150
13C4 PFHpA	87		50 - 150
13CA DEOA	04		50 150

1002111101	00	00 - 100
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 M2-8:2 FTS 83

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5/30/2019

50 - 150

50 - 150

QC Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50156-6

Project/Site: TrustFund_Londonderry SDG: 21 Lawson Farm Rd - Londonderry, NH

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

Lab Sample ID: LCSD 320-294903/3-A Matrix: Water			(Client Sa	ample	ID: Lab	Control Prep Ty		
Analysis Batch: 297148							Prep Ba	itch: 29	94903
•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	41.0		ng/L		102	71 - 131	8	30
(PFDoA) Perfluorotridecanoic acid	40.0	42.5		ng/L		106	72 - 132	3	30
(PFTriA)	40.0	05.0		,,			00 100		
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-methylperfluorooctanesulfona midoacetic 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	40.0	41.2		ng/L		103	72 - 132	5	30

(PFHxDA)			
	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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 Job ID: 320-50156-6

Project/Site: TrustFund_Londonderry 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 I	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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

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

Client Sample ID: NOB_043

Lab Sample ID: 320-50156-6

Matrix: Water

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not do	•	rt, but the laboratory	is not certified by the	e governing authority.	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	DoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFH)	(A)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFN	A)
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perfluc	orooctanoic acid (PFOA	()
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFP	eA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

5/30/2019

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

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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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway West Sacramento, CA 95605

Client Information

Chain of Custody Record

KARLSSON

Johnson, Oriette S



COC No:

Carrier Tracking No(s):

Page 16 of 17

5/30/2019

Client Contact: Page Derek Bennett orlette.johnson@testamericainc.com **Analysis Requested** New Hampshire Dept of Environ Services Due Date Requested: Preservation Codes: 29 Hazen Drive TAT Requested (days): B - NaOH N - None Concord IDA - (MOD) PFAS, Standard List (2 Danalytes) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 Phone: G - Amchlor S - H2SO4 (603) 271-8520 Purchase Order not required T - TSP Dodecahydrate H - Ascorbic Acid WO #: 1 - Ice U - Acetone J - DI Water Pay using 3904 V-MCAA derek.bennett@des.nh.gov containers K - EDTA W - pH 4-5 Project Name: Project #: L-EDA Z - other (specify) TrustFund Londonderry Other: Londonderry, NH to Total Number Matrix Sample (W=water, Type Sasolid. Sample (C=comp, G=grab) BT=Tissue, A=Air Sample Identification Sample Date Time Special Instructions/Note: Preservation Code: FIELD BLANK 6 0300 DW MOB-039, 460 HEXENRY, Londonderry, MH X DW X G DW NOB-04097GILCREASTRO LONDONDERRY, AUY NOB-041, 19HO ON HATEL LOW DONDERRY, NH X 6 WC X DW LXG NOB-043, 216AWSONFARMED, LONDONDERPYNY * Use characters before first comma as station IDX 320-50156 Chain of Custody Possible Hazard Identification Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Return To Client Disposal By Lab Archive For Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Date: fethod of Shipment Company 19 9:30 1003 NHDES DES S17/19 14/10 DES ETA-SAC 900 Custody Seal No .: Custody Seals Intact: Cooler Temperature(s) "C and Other Remarks: 806016 A No Ver: 08/04/2016

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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 Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Nelson, Kym D

Steator. Neison, Rym D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey neter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	806016
The cooler or samples do not appear to have been compromised or ampered 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	
s the Field Sampler's name present on COC?	False	
There are no discrepancies between the sample IDs on the containers and he 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	
f 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	

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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		Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval Londonderry, NH, #95160.00		Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval Londonderry, NH, #95160.00		Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval Londonderry, NH, #95160.00		Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00	_ ′	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



NELSON ANALYTICAL LAB

RP190513098

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

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

Date Reported :

13-May-19 17:18

REPORT OF ANALYSIS

119050295.05

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

sampled Date: 02-May-2019 02:20

Nitrate

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

Danaukina

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

S/2/19 | S45 7 GAQUARIAN ANALYTICAMAS - 295 153 West Road Canterbury, NH 03224 Phone: (603)783-9097 E-mail: frontdesk@aquarianlabs.com Chlorine: Pos Uniorine: Pos Neg Botile: TC__MIN 5 40ML A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Please inquire about Project #: 95/60.00 Same Day Turnaround rush service. If we are Project Name: Landonberry GW Audi Project Manager: Mar K able to meet your rush One Day Turnaround needs with reasonable Town/Site: London Report To: Mark Henders Two Day Turnaround effort, we will not charge Sampler: War Invoice To: Mccounts a rush fee. Please call Three Day Turnaround Company: Nalis ahead. Phone: 603-224-41 Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics All samples taken 5/2 # of Containers per K Karlsson Collection Sample ID ルDate/Time NOB- 039, 460Horan, London der, NH Aquarian ID

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Were samples delivered on ice?: Ses / No.

ls this NH "Odd Fund" related?



317 Elm Street Milford, NH 03055

Lab ID: 19050350

Date Received: 5/21/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050350

Lab ID: Date: 19050350 6/10/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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"



03302-0

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

NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19050350

19050350 Lab ID:

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

6/10/2019

Concord NH Project Name: MTBE_01

Project Location: 39 Rollingridge Rd Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ntrix
19050350-002	NOB_047	-			5/15/20	19 9:15:00 AM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Chlorotoluene	Э	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Ethoxy-2-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Prop	oanol (TBA)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
4-Chlorotoluene	е	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
4-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloror	nethane	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 Disulfid	e	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrach	nloride	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
			-			,	1 6	2

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Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
19050350-002	NOB_047				5/15/20	19 9:15:00 AM	Drinki	ng 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-Dichlord	oethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofurar	ì	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-Dichl	oroethene			100	6/28/2019 0.5			LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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.



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

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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.

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

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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.
В	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

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

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

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 1.6° 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

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

Client Sample ID: NOB_047

Lab Sa	ample	ID: 320)-50559- ⁻
--------	-------	---------	-----------------------

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	JB	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

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

Client Sample ID: NOB_047

Date Received: 05/22/19 09:30

Lab Sample ID: 320-50559-1 Date Collected: 05/15/19 09:15

Matrix: Water

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	-		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		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	JB	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-methylperfluorooctanesulfonamidoa cetic 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
12C4 DEUn A			EO 1EO				05/20/40 06:20	05/21/10 02:10	

(PFHxDA)						
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
1802 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

6/12/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50559-1 Project/Site: DWGTF Londonderry 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)									
		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)		
320-50559-1	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		
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)			
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS		
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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		
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)			
		M282FTS									
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/12/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50559-1 Project/Site: DWGTF Londonderry 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	
Pren Tyne: Total/NA	

Prep Batch: 297630

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MD	MD							

Perfluoro-n-hexadecanoic acid	ND		2.0	0.89 ng/L	05/29/19 06:30	05/31/19 01:37	1
(PFHxDA)							
		MB					
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/I Prep Batch: 2976	
•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130	_

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 19 6/12/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-297630/2-A

Matrix: Water

13C4 PFOA

13C5 PFNA

13C2 PFDA

13C2 PFUnA

13C2 PFDoA

13C3 PFBS

13C2 PFTeDA

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Analysis Batch: 298173

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

LCS LCS

Spike

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

Client Sample II	D: Lab Control Sample
	Pren Type: Total/NA

Prep Batch: 297630 %Rec.

Analyte	Added	Result	Qualifier Unit	D %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	40.0	37.7	ng/L	94	60 - 120	
(PFUnA)						
Perfluorododecanoic acid	40.0	39.0	ng/L	98	71 - 131	
(PFDoA)						
Perfluorotridecanoic acid	40.0	41.8	ng/L	104	72 - 132	
(PFTriA)						

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			40.0	37.7	ng/L	94	60 - 120	
(PFUnA)								
Perfluorododecanoic acid			40.0	39.0	ng/L	98	71 - 131	
(PFDoA)							6 166	
Perfluorotridecanoic acid			40.0	41.8	ng/L	104	72 - 132	
(PFTriA) Perfluorotetradecanoic acid			40.0	34.4	ng/L	86	68 - 128	
(PFTeA)			40.0	34.4	ng/L	00	00 - 120	
Perfluorobutanesulfonic acid			35.4	39.6	ng/L	112	73 ₋ 133	
(PFBS)					Ü			
Perfluorohexanesulfonic acid			36.4	32.1	ng/L	88	63 - 123	
(PFHxS)								
Perfluoroheptanesulfonic Acid			38.1	40.1	ng/L	105	68 - 128	
(PFHpS)			07.4	00.0		0.4	07 407	
Perfluorooctanesulfonic acid			37.1	33.8	ng/L	91	67 - 127	
(PFOS) Perfluorodecanesulfonic acid			38.6	39.0	ng/L	101	68 - 128	
(PFDS)			00.0	00.0	ng/L	101	00 - 120	
N-methylperfluorooctanesulfona			40.0	38.8	ng/L	97	67 ₋ 127	
midoacetic acid (NMeFOSAA)					ŭ			
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			40.0	37.4	ng/L	94	72 - 132	
(PFHxDA)								
		LCS						
Isotope Dilution	%Recovery	Qualifier	Limits					
13C4 PFBA	90		50 - 150					
13C5 PFPeA	98		50 - 150					
13C2 PFHxA	97		50 - 150					
13C4 PFHpA	99		50 - 150					

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

99

100

91

95

95

87

87

47

95

91

95

94

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-297630/3-A

Matrix: Water

(PFHxDA)

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

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

Client Sample ID: Lab Control Sample Du
Prep Type: Total/N/
Draw Bataba 20702

matrix rrate.								PU U.	
Analysis Batch: 298173	Onilea	1.000	1.00D				Prep Ba	atch: 29	
Analyte	Spike Added	LCSD	Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	41.5	Qualifier	ng/L		104	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	40.0	38.8		ng/L		97	66 ₋ 126	3 1	30
Perfluorohexanoic acid (PFHxA)	40.0	37.8		ng/L		94	66 - 126	4	30
I									
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-methylperfluorooctanesulfona midoacetic 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	40.0	36.9		ng/L		92	72 - 132	1	30

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50559-1

Project/Site: DWGTF Londonderry 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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

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

Client Sample ID: NOB_047

Lab Sample ID: 320-50559-1

Matrix: Water

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

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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	· · · · · · · · · · · · · · · · · · ·
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. T	his list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfor IMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA))
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid ((PFDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFI	DoA)
EPA 537(Mod)	3535	Water	Perfluc	proheptanesulfonic Acid	(PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	pA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid ((PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHx	A)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA	A)
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (l	PFOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPe	eA)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (P	PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFT	ГriA)
EPA 537(Mod)	3535	Water	Perfluc	proundecanoic acid (PF	UnA)

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

6/12/2019

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Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50559-1 Project/Site: DWGTF Londonderry 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	

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880 Riverside Parkway

West Sacramento, CA 95605 Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record

Tooth	norine
TestAm	Ielic (

THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Kenn	100		ab PM: ohnson	, Orle	, Orlette S		Carner Trackin	Carner Tracking No(s):		COC No:			
Client Information Client Contact: Derek Bennett	Phone: 607 - 224			100	Mail: rlette.io	hnso	on@testamericain	e.com				Page:	f1		
Company:	W/1 24.0	700					7.0	alysis Re	augeted		-	Job #:			
New Hampshire Dept of Environ Services Address:	Due Date Request	ed:		-	+		AI	lalysis Re	questea	1 1 1		Preservation Cor	des:		
29 Hazen Drive City:	TAT Requested (d	nucl			-11			1.1	111	1 1 1		A - HCL	M - Hexane		
Concord	TAT nequested (u	ауы).					(es)	11	1111	1 1 1		E - NaOH C - Zn Acetate	N - None O - AsNaO2		
State, Zip: NH, 03302	Standard TAT	tandard TAT			Standard TAT				Analy			1 1 1		D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
Phone:	PO#:	CONTRACTOR OF THE PARTY OF THE			71		[5]		1.4.1	1 1 1		F - MeOH G - Amchlor	H - Na2S2O3 S - H2SO4		
(603) 271-8520 Email:	Purchase Orde	r not require	d		- (ŝ			1.1	111	1 1 1		H + Ascorbio Acid I - Ice	T - TSP Dodecahydrate U - Acetone		
derek.bennett@des.nh.gov	Pay using 3904	av using 3904			s or	No.	ndard	11	2			J - DI Water	V-MCAA		
Project Name: TrustFund_Londonderry	Project #:				(Ye	18 OF	as l	11		1084	K-EDTA W-pH-				
Site:	SSOW#				Sample (Yes	٥ (٨	PF P		1 1 1	1104	con	Other:			
Londonderry, NH			1		- Sp	SWIS	(100	11	I I I	133	er of				
		Sample	Sample Type (C=comp,	Matrix (Wester, Secolid Oewastelor BT=Tiasue, As	eld Filtered	Perform MS/MSD (Yes or No)	PFC, IDA - (MOD) PFAS, Standard List (21 Analytes)				Total Number of containers				
Sample Identification	Sample Date	Time		ation Code	- AS	X	ī	-			×	Special In	structions/Note:		
NOB-047, 34 Rolling 1. Agend Lunde Long, NH	5/15/19	0915	6	Dis	1		K				2				
AND THE LOW LAND AND THE PARTY HOLD	5/15/19	1015	6	Du	N	1					2				
NOB 018, 18 116 tells Pan, Good Sarry, NH					W	×					2				
NOB-049, Ithinks I don Dr. Landardery, NH	5/15/19	1045	6	Dev	1	-					1				
NOB-048, 18 Hotelas Han, boodonderry, NH NOB-049, 17 Windselder Dr. Landonderry, NH NOB-050, 2 Fayela, Londonderry, NH	5/15/19	1135	6	Dlu	-	- 8	c				^				
					+	-				1 1 [
											111111111	III HII III III III III III III	m -		
										-50559 Cha					
									320	-50559 Cha	in of C	ustody			
					+				111	1 1 1			_		
				-	+	+					-				
Possible Hazard Identification					1	Sami	ple Disposal (A 1	ee may he	assessed if s	amples are	retains	d longer than 1	month)		
Non-Hazard Flammable Skin Irritant Pois	on B Unkn	own D	Radiological		1		Return To Client	P	bisposal By L	ab [Archi	ve For	Months		
Deliverable Requested: I, II, III, IV, Other (specify)					5		ial Instructions/QC	Requireme	ints:						
Empty Kit Relinquished by:		Date:			Tim				Method of	Shipment					
Relinquished by:	Date/Time:			Company		H	eceived by	10.1		Date/Time.	1.11	e 01.118	Company		
Relinquismed by)	Date/Time:	0035		Company		R	AUHDES C		- 1	Photo Officers	17/1		DE5 Company		
Bollet What his	Date/Time: // FI	14:0	99	NHD	15		SAIDE	Code		Date/Time:	117	14:00	NHOES		
Relegiation by:	Daterrime			Company		P	ecewed by	1	1-601	Date/Time:	22/19	930	Company E7AW		
Custody Seals Intact: Custody Seal No.: A Yes A No						C	ooler Temperature(s)	C and Other R	emarks:		(-				

6/12/2019

Page 16 of 19

Ver. 08/04/2016

& eurofins

Environment Testing TestAmerica



acramento ring Notes

Job

his form to record Sample Custody Seal, Cooler Custo the job folder with the COC.	OnTrac / Goldstreak / USPS / Other _ dy Seal, Temperature & corrected Temperature & o						
oles: vic COC's not relinguished	Therm. ID: HACR Corr. Facto	-					
- I popul	Cooler Custody Seal: Sample Custody Seal:						
	Cooler ID:						
	Temp Observed: 1.6 Corrected:						
1	From: Temp Blank 🗅 Sample 🎾						
	NCM Filed: Yes □ No						
	The state of the s	Yes	No	NA			
	Perchlorate has headspace?	D	D	1			
	Alkalinity has no headspace?	D		4			
	CoC is complete w/o discrepancies?		0				
	Samples received within holding time?	80	D	D			
	Sample preservatives verified?			桕			
	Cooler compromised/tampered with?		₽	D			
1 2	Samples compromised/tampered with?	ם	B	D			
	Samples w/o discrepancies?	Ð					
	Sample containers have legible labels?						
	Containers are not broken or leaking?	B					
	Sample date/times are provided.	8	ם	ם			
	Appropriate containers are used?	12					
	Sample bottles are completely filled?	D					
	Zero headspace?*	B					
	Multiphasic samples are not present?	B					
	Sample temp OK?	B					
	Sample out of temp?		B	D			



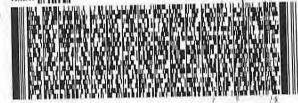
THE LEADER IN ENVIRONMENTAL

(603) 271-8483

CONCORD, NH 033016503 UNITED STATES US

10 SAMPLE RECEIVING TESTAMERICA WEST SACRAMENTO 880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605/ (916) 373-5600 REF: \$480-129630





FedEx TRK# 4917 8544 6452

WED - 22 MAY 10:30A PRIORITY OVERNIGHT

BLUA

95605 CA-US SMF



#3769514 05/21 565J1/D66C/23AD



Job Number: 320-50559-1

SDG Number: 39 Rolling Ridge Rd - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 50559

List Number: 1

Creator: Oropeza, Salvador

Creator. Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



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 Certification #VT1005 www.nelsonanalytical.com

Date Reported :

20-May-19 16:01

REPORT OF ANALYSIS 119051813.01

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

sampled Date: 15-May-2019 09:15

Nitrate

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

Donorting

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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. Time Rec'd. Temp Rec'd: A Location: No. Cooler: V. N. Ioe: NA. NA. Settle: TC. Min. 40ML HCL. LC. OTHER. Turnaround Requirements (check one) Rush Samples Need Prior Approval	QUARIA	N ANA	ALYTICA n Analytical, LI Proj	L/I/AB	- 4 Hamail: frontdesk@aq	153 West Road bury, NH 03224 (603)783-9097 uarianlabs.com			
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. Rush Samples Need Prior Approval Same Day Turnaround Two Day Turnaround Three Day Turnaround Normal Turnaround	Project #: 4 Project Name: 4 Town/Site: 4	95/60.00 orderchery to	udally Eval.	Project M	pject Manager: Mark Henderson Report To: Mark Henderson Invoice To: Accounts Parable Phone: 603-224-4182 E-mail: MHenchoon Endis-gong.com				
Sample Information	VOCs	SVOCs	Petroleum	Metals	Wet Chemistry / Inorganics				
Sample ID Collection Date/Time of Strate of S	# of Containers VOCs EPA 8260188260C Select Parameter only. VOCs EPA 524.2 Drinking Water Select Parameter only. 14-diovane / EDB 82608 SIM low level SVOCs EPA 8270C/8270D Full list / PAH only PCB Ancions	EPA 8082/ / 608 Pesticidas EPA 8081B / 608 Herbididas EPA 8151B EP	TPH Fuel Oil 81,000M Diesel Range Organics TPH Gasoline 8015B Gasoline Range Organics MADEP EPH MADEP VPH Petroleum Fingerprint Analysis	RCRA8 metals (circle) NI Coul Zn Fe / Mn (circle) Total / Dissolved Sodium / Calcum / Magnesium Total / Dissolved Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide Jungie / Ratife / Fluoride PH / Spec Con / Alkalinity (circle analysis requested) EPA SW446 Chapter EPA SW446 Chapter EPA 314.0: Perchlorate Closed-Cup Flashpoint / EPA 1010A ignitability EPA 1610A HEM Oil and Grease Clotal Dissolved Solids (TDS) / Total Dissolved Solids (TSS) TCLP (please also check off the required analyses)	Aquarian ID			
Relinquished by: Date/Time: 57/57/9	Received by:		Receipt Conditions (lab	poratory use only):	PROJECT REQUIREMENTS (Please con	· .			
Relinquished by: Relinquished by: Date/Time:	Received by:		Laboratory Supplied Containers? Containers intact/Properly Labele Were samples delivered on ige Receipt Temperature	ed? Yes / No Yes / No	ISO 17025 accreditation required?YesN EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM				

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

LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

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4

8

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Definitions/Glossary

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

Qualifiers

LC	MS

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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

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

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 1.6° 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

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

Client Sample ID: NOB_048

Lab	Sample	ID:	320-5	50559-2

Analyte	Result Qualifier	RL	MDL Uni		D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.33 JB	1.9	0.16 ng/l	1	_	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Date Received: 05/22/19 09:30

M2-8:2 FTS

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

Client Sample ID: NOB_048 Lab Sample ID: 320-50559-2 Date Collected: 05/15/19 10:15

Matrix: Water

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	8-15 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	JB	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-methylperfluorooctanesulfonamidoa cetic 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
1802 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

05/29/19 06:30 05/31/19 02:26

50 - 150

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

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

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50559-2	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/12/2019

Lab Sample ID: MB 320-297630/1-A

Matrix: Water

Analysis Batch: 298173

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

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

Prep Type: Total/NA

Prep Batch: 297630

	MB N	/IB							
Analyte	Result C	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-methylperfluorooctanesulfonamidoa cetic 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
	MR N	//R							

(DELL-DA)				•		
(PFHxDA)	MB	MR				
Isotope Dilution	%Recovery		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
1802 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

Lab Sample ID: LCS 320-297630/2-A

M2-8:2 FTS

Matrix: Water							Prep Type: Total/NA
Analysis Batch: 298173							Prep Batch: 297630
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

50 - 150

93

05/29/19 06:30 05/31/19 01:37

Client Sample ID: Lab Control Sample

Page 8 of 17

Lab Sample ID: LCS 320-297630/2-A

Matrix: Water

Analyte

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

(PFHxDA)

Isotono Dilution

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

Analysis Batch: 298173

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

Spike

Added

LCS LCS

Result Qualifier Unit

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

Client Sample I	D: Lab Control Sample
	Prep Type: Total/NA

D %Rec

Limits

Prep Batch: 297630 %Rec.

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	37.1	33.8	ng/L	91	67 - 127	

37.9

38.3

40.0

36.0

36.3

37.4

37.1	33.0	rig/L	31	07 - 127
38.6	39.0	ng/L	101	68 - 128
40.0	38.8	ng/L	97	67 - 127

ng/L

ng/L

ng/L

95

95

66 - 126

67 - 127

72 - 132

LCS	LCS	
%Recovery	Qualifier	Limits
90		50 - 150

isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-297630/3-A

Perfluoro-n-hexadecanoic acid

(PFHxDA)

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

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prop Ratch: 207630

Matrix: Water Analysis Batch: 298173	Spike	LCSD	LCSD			Prep Ty Prep Ba %Rec.		
Analyte	Added		Qualifier	Unit	D %Rec	Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	40.0	41.5		ng/L		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-methylperfluorooctanesulfona midoacetic 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

40.0

36.9

ng/L

92

72 - 132

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50559-2 Project/Site: DWGTF Londonderry 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

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

Client Sample ID: NOB_048

Lab Sample ID: 320-50559-2

Matrix: Water

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

NAB	DoD			L2468	01-20-21
The following analytes the agency does not o	•	ort, but the laboratory	is not certified by the	e governing authority.	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	onamidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA	4)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFD	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (Pf	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Aci	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFF	HpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFH	xA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic ac	id (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFN	A)
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic acid	(PFOS)
EPA 537(Mod)	3535	Water	Perfluc	orooctanoic acid (PFO	A)
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFF	PeA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (Pf	- =UnA)

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

Job ID: 320-50559-2 Project/Site: DWGTF Londonderry 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	

880 Riverside Parkway West Sacramento, CA 95605 **Chain of Custody Record**

THE LEADER IN ENVIRONMENTAL TESTING

Phone (916) 737-5600 Fax (916) 372-1059											THE LEADER IN ENVIRONMENTAL TESTING
Client Information	Sampler:	Kenes	NOW.		b PM: bhnso	n, O	riette S		Carner Tracking No(s):		COC No:
Client Contact: Derek Bennett	Phone: 607 - 224				Mail: lette.j	johns	son@testa	americainc.com			Page: \ of
Company: New Hampshire Dept of Environ Services					T	Analysis Reque			Requested		Job #
Address:	Due Date Request	ed:					1 1				Preservation Codes:
29 Hazen Drive City:	TAT Requested (d	ays):	_		+				11111	1 1 7	A - HCL M - Hexane B - NaOH N - None
Concord							ytes)		11111		C - Zn Acetete O - AsNaO2 D - Nitric Acid P - Na2O4S
State, Zip: NH, 03302	Standard TAT				10		Anal		1 1 1 1 1 1	1 18	E - NaHSO4 Q - Na2SO3
Phone: (603) 271-8520	Po #: Purchase Orde	r not require	ed		7		Standard List (21 Analytes)		11111		F - MeOH R - Na2S2O3 G - Amchlor S - H2SC4 H - Ascorbic Acid T - TSP Dodecahydrate
Email:	WO#: Pay using 3904				Or N	6	ard L				I - Ice U - Acetone J - DI Water V - MCAA
derek,bennett@des.nh.qov Project Name:	Project #:				Yes	N ro	Stand	1010 4 4 4		iners	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
TrustFund_Londonderry Site:	SSOW#:				ble ((Yes				containe	Other:
Londonderry, NH	330***				Sam	USD (O) PF			of	OME:
Sample Identification	Sample Date	Sample Time		Matrix (W-water, S-solid O-waste/oil BT=Tissue, Ass	Field Filte	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS,			Total Number	Special Instructions/Note:
	><	><	Preserva	ation Code	X	X				IX	
NOB-047, 34 Rolling, Sycril, Evade Lorg, NH	5/15/19	0915	6	Dis	1		K			2	
NOB 048, 28 Hazolas Han, Lendondory, WH	5/15/19	1015	6	Du	N		*			2	
NOB-049, 17Winds I day Dr. Londonberry, NH	5/15/19	1045	6	Dev	N		x			2	
NOB-047, 3772 Ming i Agend bunde brig. NA NOB-048, 28 Hetelas than, beadonderry, NA NOB-049, 17Windelder Dr. Landonderry, NA NOB-050, 2 Fayely, Landonderry, NA	5/15/19	1/35	6	De	U		X			1	
					1				++ 'minimi	1800000	IIII Director
									320-50550		
									320-50559	Chain of C	Ustodi:
	+					Н			1111	N	actody
					+	H					
Possible Hazard Identification						Sar	nole Disc	posal (A fee may be	e assessed if samples	are retaine	d longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois	on B Unkn	own 🖂	Radiological			E		To Client	Disposal By Lab	Archit	
Deliverable Requested: I, II, III, IV, Other (specify)						Spe	icial Instru	uctions/QC Requiren	nents:		
Empty Kit Relinquished by:		Date:			Ti	me:			Method of Shipment		
Relinquished by:	Date/Time:	* 1.2.		Company			Received by	Y = 010 11	Date/Tin		Company
Relinquistred by)	5/17/19 Date/Time: 1	0035		Gompany	-		Received by		Date/Tin	5/17/1	Company
Religioned by:	5/21/fl	14:0	99	Company Company	5		Received by	going Cool	382 SI	21/19	14:00 NHDES
	Date i mile:			Company			(SILIN	1-602 Ballering	122/19	930 ETAW
Custody Seals Intact: Custody Seal No.: A Yes A No							Cooler Test	perature(s) C and Other	Remarks:		

6/12/2019

Page 16 of 17

Ver; 08/04/2016

Job Number: 320-50559-2

SDG Number: 28 Hazelnut Ln - Londonderry, NH

Login Number: 50559 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

oreator. Oropeza, Garvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



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 Certification #VT1005 www.nelsonanalytical.com

Date Reported :

20-May-19 16:01

REPORT OF ANALYSIS 119051813.02

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

sampled Date: 15-May-2019 10:15

Nitrate

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

Donorting

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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. Time Rec'd. Temp Rec'd: A Location: No. Cooler: V. N. Ioe: NA. NA. Settle: TC. Min. 40ML HCL. LC. OTHER. Turnaround Requirements (check one) Rush Samples Need Prior Approval	QUARIA	N ANA	ALYTICA n Analytical, LI Proj	L/I/AB	- 4 Hamail: frontdesk@aq	153 West Road bury, NH 03224 (603)783-9097 uarianlabs.com
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. Rush Samples Need Prior Approval Same Day Turnaround Two Day Turnaround Three Day Turnaround Normal Turnaround	Project #: 4 Project Name: 4 Town/Site: 4	95/60.00 orderchery to	udally Eval.	Project M	Manager: Mark Henderson eport To: Mark Henderson voice To: Mark Henderson Phone: 603-224-4182 E-mail: MHenderson Endis	ble
Sample Information	VOCs	SVOCs	Petroleum	Metals	Wet Chemistry / Inorganics	
Sample ID Collection Date/Time of Strate of S	# of Containers VOCs EPA 8260188260C Select Parameter only. VOCs EPA 524.2 Drinking Water Select Parameter only. 14-diovane / EDB 82608 SIM low level SVOCs EPA 8270C/8270D Full list / PAH only PCB Ancions	EPA 8082/ / 608 Pesticidas EPA 8081B / 608 Herbididas EPA 8151B EP	TPH Fuel Oil 81,000M Diesel Range Organics TPH Gasoline 8015B Gasoline Range Organics MADEP EPH MADEP VPH Petroleum Fingerprint Analysis	RCRA8 metals (circle) NI Coul Zn Fe / Mn (circle) Total / Dissolved Sodium / Calcum / Magnesium Total / Dissolved Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide Jungie / Ratife / Fluoride PH / Spec Con / Alkalinity (circle analysis requested) EPA SW446 Chapter EPA SW446 Chapter EPA 314.0: Perchlorate Closed-Cup Flashpoint / EPA 1010A ignitability EPA 1610A HEM Oil and Grease Clotal Dissolved Solids (TDS) / Total Dissolved Solids (TSS) TCLP (please also check off the required analyses)	Aquarian ID
Relinquished by: Date/Time: 57/57/9	Received by:		Receipt Conditions (lab	poratory use only):	PROJECT REQUIREMENTS (Please con	· .
Relinquished by: Relinquished by: Date/Time:	Received by:		Laboratory Supplied Containers? Containers intact/Properly Labele Were samples delivered on ige Receipt Temperature	ed? Yes / No Yes / No	ISO 17025 accreditation required?YesN EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM	



317 Elm Street Milford, NH 03055

Lab ID: 19050350

Date Received: 5/21/2019

(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

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





03302-0

317 Elm Street Milford, NH 03055

(603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

Derek S. Bennett

Concord

Control #:

19050350

Lab ID: Date: 19050350 6/10/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Project Name:

MTBE_01

Project Location: Londonderry NH

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

Analytical Results

Lab ID:

Date:

19050350

6/10/2019

NHDES MtBE Remediation Bureau

Control #: 19050350

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

Concord

Derek S. Bennett

NH 03302-0

Project Name: MTBE_01

Project Location: 28 Hazelnut Ln Londonderry NH

Sample Clie	nt Sample Identity	1			Start Date/T	ime Sampled:	Ma	ntrix
19050350-003 NOE	3_048				5/15/20	19 10:15:00 AM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroeth	hane	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-Tetrachloroeth		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-Trichlorobenzer	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropan		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenzer		EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenze		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chloro		EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoethane	propario	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-Trichlorobenzer	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenze		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 Pro	opane (FTBF)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Hexanone	opao (= : ==)	EPA 524.2	< 12 ug/L			6/28/2019	12	LauraB
2-Methoxy-2-Methyl E	Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl F	, ,	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propanol (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
Bromodichloromethar		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
			: 3.2 3 g / =				Page 1 of	

Page 1 of 3



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

Sample	Client Sample Ide		Start Date/T	ime Sampled:	Ma	atrix		
19050350-003 NOB_048					5/15/20	19 10:15:00 AM	Drinki	ing water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
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-Dichlord	pethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichlord	propene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloron	nethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ket	one (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
viriyi Chloride		EPA 524.2	< 0.5 ug/L	2		0/20/2013	Ü	.o



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.

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

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

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

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

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

Qualifiers

LCMS	
Qualifier	Qualifier Description
*	Instant Dilution analyte is systematically

Isotope Dilution analyte is outside acceptance limits. В 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)

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DL, RA, RE, IN

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** 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) Toxicity Equivalent Quotient (Dioxin) TEQ

3

Case Narrative

Client: New Hampshire Dept of Environmental Serv

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

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 1.6° 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

Job ID: 320-50559-4 Project/Site: DWGTF Londonderry 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	JB	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

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

Client Sample ID: NOB_050

Lab Sample ID: 320-50559-4 Date Collected: 05/15/19 11:35

Matrix: Water Date Received: 05/22/19 09:30

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	ND		1.9	0.33	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.47	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.55	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorooctanoic acid (PFOA)	0.94	J	1.9	0.81	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorohexanesulfonic acid (PFHxS)	0.36	JB	1.9	0.16	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9		ng/L			05/31/19 02:42	
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		05/29/19 06:30	05/31/19 02:42	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		05/29/19 06:30	05/31/19 02:42	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			05/31/19 02:42	
6:2 FTS	ND		9.5		ng/L			05/31/19 02:42	
3:2 FTS	ND		1.9		ng/L			05/31/19 02:42	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/29/19 06:30	05/31/19 02:42	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	87		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C5 PFPeA	90		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C2 PFHxA	92		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C4 PFHpA	92		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C4 PFOA	95		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C5 PFNA	94		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C2 PFDA	97		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C2 PFUnA	99		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C2 PFDoA	97		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C2 PFTeDA	85		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C3 PFBS	89		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C2 PFHxDA	50		50 - 150				05/29/19 06:30	05/31/19 02:42	
1802 PFHxS	85		50 - 150				05/29/19 06:30	05/31/19 02:42	
13C4 PFOS	86		50 - 150				05/29/19 06:30	05/31/19 02:42	
d3-NMeFOSAA	93		50 - 150				05/29/19 06:30	05/31/19 02:42	
M2-6:2 FTS	101		50 - 150				05/29/19 06:30	05/31/19 02:42	
M2-8:2 FTS	97		50 ₋ 150				05/29/19 06:30	05/31/19 02:42	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

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

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50559-4	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Cumpage Lagand									

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

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6/12/2019

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

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

Lab Sample ID: MB 320-297630/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 298173	Prep Batch: 297630
мв мв	

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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	ND		2.0	0.89	ng/L		05/29/19 06:30	05/31/19 01:37	1

(PFHxDA)						
· · · · ·	MB	MB				
Isotope Dilution	%Recovery	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
1802 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	Lab Sam	ple ID:	LCS 320)-297630/2-A
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Matrix: Water Analysis Batch: 298173							Prep Type: Total/NA Prep Batch: 297630
•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

Eurofins TestAmerica, Sacramento

6/12/2019

Client Sample ID: Lab Control Sample

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Lab Sample ID: LCS 320-297630/2-A

Matrix: Water

Analyte

(PFHxS)

(PFHpS)

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

Perfluoroheptanesulfonic Acid

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Analysis Batch: 298173

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

Spike

Added

LCS LCS

Result Qualifier

Unit

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

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

Client Samp	ole ID: Lab	Contro	I Sample
	Prei	o Type:	Total/NA

D %Rec

105

91

101

97

95

95

94

68 - 128

67 - 127

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

Prep Batch: 297630 %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	40.0	41.8	ng/L	104	72 - 132	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	34.4	ng/L	86	68 ₋ 128	
(PFTeA)						
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6	ng/L	112	73 - 133	
Perfluorohexanesulfonic acid	36.4	32.1	ng/L	88	63 - 123	

38.1

37.1

38.6

40.0

37.9

38.3

40.1

33.8

39.0

38.8

36.0

36.3

37.4

Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0
(TTIXDA)	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

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

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

Lab Sample ID: LCSD 320-297630/3-A			C	Client Sa	ample	ID: Lab	Control		
Matrix: Water							Prep Ty		
Analysis Batch: 298173	Spike	I CCD	LCSD				Prep Ba	atcn: 2	9/630 RPD
Analyte	Added	_	Qualifier	Unit	D	%Rec	MRec.	RPD	Limit
Perfluorobutanoic acid (PFBA)		41.5	- Guanner	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
	40.0	40.7				102	66 - 126	8	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L		102	64 - 124		
Perfluorooctanoic acid (PFOA)				ng/L				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	40.0	38.8		ng/L		97	60 - 120	3	30
(PFUnA)	40.0	39.6		na/I		99	71 - 131	2	30
Perfluorododecanoic acid	40.0	39.0		ng/L		99	/1-131	2	30
(PFDoA) Perfluorotridecanoic acid	40.0	42.6		ng/L		106	72 - 132	2	30
(PFTriA)	40.0	72.0		119/1		100	72-102	_	00
Perfluorotetradecanoic acid	40.0	34.9		ng/L		87	68 ₋ 128	1	30
(PFTeA)				J					
Perfluorobutanesulfonic acid	35.4	37.5		ng/L		106	73 - 133	5	30
(PFBS)									
Perfluorohexanesulfonic acid	36.4	35.5		ng/L		98	63 - 123	10	30
(PFHxS)				_				_	
Perfluoroheptanesulfonic Acid	38.1	40.1		ng/L		105	68 - 128	0	30
(PFHpS)	27.4	25.0		/I		07	07 407	0	20
Perfluorooctanesulfonic acid	37.1	35.8		ng/L		97	67 - 127	6	30
(PFOS) Perfluorodecanesulfonic acid	38.6	37.6		ng/L		97	68 - 128	4	30
(PFDS)	30.0	37.0		ng/L		31	00 - 120	7	30
N-methylperfluorooctanesulfona	40.0	40.7		ng/L		102	67 ₋ 127	5	30
midoacetic acid (NMeFOSAA)				3					
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	40.0	36.9		ng/L		92	72 - 132	1	30
(PFHxDA)				-					

,	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Job ID: 320-50559-4 Project/Site: DWGTF Londonderry 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

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

Client Sample ID: NOB_050

Lab Sample ID: 320-50559-4 Date Collected: 05/15/19 11:35 **Matrix: Water**

Date Received: 05/22/19 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-50559-4 Project/Site: DWGTF Londonderry 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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

Sampler:

TestAmerica

COC No:

Carner Tracking No(s):

Client Information	KARL	KARLOS	ou	The second secon	100000000000000000000000000000000000000	n, Or	lette S						
Client Contact: Derek Bennett	Phone: 607 - 224	-4182		E-M orle		ahns	on@testame	ericainc.com				Page:	41
Company: New Hampshire Dept of Environ Services					T			Analysis	s Requested			Job #:	
Address:	Due Date Request	led:					T					Preservation Cod	es:
29 Hazen Drive	TAT Requested (d	lays):		_	-11			111		1 1 1 1 1	- 3	A - HCL B - NaOH	M - Hexane N - None
Concord State, Zip:	Standard TAT						(21 Analytes)	111	111			C - Zn Acetaté D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302					41		1 Ans				1	E - NaHSO4 F - MeOH	O - Na2SO3 R - Na2S2O3
Phone: (603) 271-8520	Po #: Purchase Orde	r not require	d		6		List (2	1.11.1				G - Amchlor H - Ascorbic Acid	S - H2SC4 T - TSP Dodecahydrate
Email: derek.bennett@des.nh.gov	WO#: Pay using 3904				or N	No)	Standard		1 1 1			J - Ice J - DI Water	U - Acetone V - MCAA
Project Name: TrustFund_Londonderry	Project #:				(Yes	sorl	Stan	1/1/1			container	K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
Site:	SSOW#:		-	_	mple	MS/MSD (Yes	PFAS,				cont	Other:	
Londonderry, NH			-	I	- Sp	S/MSI	(00)	111	1 1 1		er of		
			Sample Type	Matrix (W=wrater,	litere	m MS	PFC_IDA - (MOD)				Number		
	0 1 0 1	Sample	(C=Comp,	(W=vrater, Sesolid O=waste/oil, BT=Tissue, AsAi	eld F	erfor	5				Total	6	
Sample Identification	Sample Date	Time		ation Code:) \\ \\ \\ \	×	a				Ż	Special Ins	structions/Note:
NOB-047, 39 Rolling 1. Syerd, conde drig. NH	5/15/19	0915	6	Dis	1		K				2		
	5/15/19	1015	6	Du	N		×				2		
NOB 048, 18 Hazdas Ha, Lendonderry, NH	5/15/19		6	Dev	1		x				2		
NOB-049, 17Windeldon Dr. Landonberg, MH		1045	6		0		x				1		
NOB-USC, 2 Fayely, London long, WH	5/15/19	1/35	6	DLU	F	H							
					+					HIIII III III III III III III III III I	-		
					+	H				20-50559 Chain o	Ш		ı —
					+	H	+				Ш		-
					+	\sqcup			3	20-50559 Chain o			-
			1							Chain o	f CL	istody	-
					Ш					111	4		
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Pois	. 🗆		Radiological		T y		nple Disposa Return To		be assessed Disposal B	if samples are reta y Lab	ine	d longer than 1 n	
Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own - F	tadiological					ons/QC Requi		y Lab A	CDIV	e ror	_ Months
Empty Kit Relinquished by:		Date:		_	Tin	me:			Metho	od of Shipment:	-		
Relinquished by.	Date/Time:			Company	-	F	Received by			Date/Time:	1		Company
Relinquistred by	5/17/19 Date/Time: 1	0035		Company		F	Aceived by:) WID	Storage Ster 3.88	S/17 Date/Time:	115	8:45	DES Company
100	5/21/A	14:0	20	NHIDE	3		Spigi	Da Co		Date/Time: 5/21/1	9	14:00	NHDES
Religibled by:	Dater rime:			Company		F	Received by	Mr	1-601	Date/Time: 5/22/	19	930	Company E7AW
Custody Seals Intact: Custody Seal No.:						0	Cooler Tempera	afure(s) °C and O	ther Remarks:				

6/12/2019

Page 16 of 17

Ver. 08/04/2016

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

Login Number: 50559 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

oreator. Oropeza, Jarvauor		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



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 Certification #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, **sampled Date:** 15-May-2019 11:35

Nitrate

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

Danaukina

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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. Time Rec'd. Temp Rec'd: A Location: No. Cooler: V. N. Ioe: NA. NA. Settle: TC. Min. 40ML HCL. LC. OTHER. Turnaround Requirements (check one) Rush Samples Need Prior Approval	QUARIA	N ANA	ALYTICA n Analytical, LI Proj	L/I/AB	- 4 Hamail: frontdesk@aq	153 West Road bury, NH 03224 (603)783-9097 uarianlabs.com
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. Rush Samples Need Prior Approval Same Day Turnaround Two Day Turnaround Three Day Turnaround Normal Turnaround	Project #: 4 Project Name: 4 Town/Site: 4	95/60.00 orderchery to	udally Eval.	Project M	Manager: Mark Henderson eport To: Mark Henderson voice To: Mark Henderson Phone: 603-224-4182 E-mail: MHenderson Endis	ble
Sample Information	VOCs	SVOCs	Petroleum	Metals	Wet Chemistry / Inorganics	
Sample ID Collection Date/Time of Strate of S	# of Containers VOCs EPA 8260188260C Select Parameter only. VOCs EPA 524.2 Drinking Water Select Parameter only. 14-diovane / EDB 82608 SIM low level SVOCs EPA 8270C/8270D Full list / PAH only PCB Ancions	EPA 8082/ / 608 Pesticidas EPA 8081B / 608 Herbididas EPA 8151B EP	TPH Fuel Oil 81,000M Diesel Range Organics TPH Gasoline 8015B Gasoline Range Organics MADEP EPH MADEP VPH Petroleum Fingerprint Analysis	RCRA8 metals (circle) NI Coul Zn Fe / Mn (circle) Total / Dissolved Sodium / Calcum / Magnesium Total / Dissolved Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide Jungie / Ratife / Fluoride PH / Spec Con / Alkalinity (circle analysis requested) EPA SW446 Chapter EPA SW446 Chapter EPA 314.0: Perchlorate Closed-Cup Flashpoint / EPA 1010A ignitability EPA 1610A HEM Oil and Grease Clotal Dissolved Solids (TDS) / Total Dissolved Solids (TSS) TCLP (please also check off the required analyses)	Aquarian ID
Relinquished by: Date/Time: 57/57/9	Received by:		Receipt Conditions (lab	poratory use only):	PROJECT REQUIREMENTS (Please con	· .
Relinquished by: Relinquished by: Date/Time:	Received by:		Laboratory Supplied Containers? Containers intact/Properly Labele Were samples delivered on ige Receipt Temperature	ed? Yes / No Yes / No	ISO 17025 accreditation required?YesN EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM	



317 Elm Street Milford, NH 03055

Lab ID: 19050350

Date Received: 5/21/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050350

Lab ID: Date: 19050350 6/10/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

Lab ID: 19050350

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	
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?	
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"



Analytical Results

NHDES MtBE Remediation Bureau

29 Hazen Drive, PO Box 95

Derek S. Bennett

Control #: 19050350

19050350 Lab ID: Project Number: TrustFund Londonderry 6/10/2019 Date:

Project Name: Concord NH 03302-0 MTBE_01

Project Location: 2 Frye Ln Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19050350-005	NOB_050				5/15/20	19 11:35:00 AM	Drinki	ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	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-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorob	Denzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorober		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropro	pane	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-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Prop		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-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloron	nethane	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 Disulfid	e	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrach		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
			3					

Page 1 of 3



19050350-005 Parameter Chloroethane Chloroform	NOB_050	Madhaad		ent Sample Identity B_050 Start Date/Time Sampled: 5/15/2019 11:35:00 AM		Data Li		
Chloroethane		Made at			2 27 = 0	IVIA UU.35.UU AIVI	Drinki	ng water
		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloroform		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
		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-Dichlor	pethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichlor	opropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloro	nethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromometha	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Etl	ner	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
Hexachlorobuta	idiene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ke	tone (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 Chlo	ride	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-Propylbenze	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofurai	1	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-Dich	oroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dich	oropropene	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
Trichlorofluoror	nethane	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



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

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

Lab ID: 19060104

Date Received: 6/6/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19060104

Lab ID: Date: 7/1/2019

19060104

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Project Name:

MTBE_01

Project Location: Londonderry, NH

19060104 Lab ID:

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"



7/1/2019

Date:

NHDES MtBE Remediation Bureau

Analytical Results

Derek S. Bennett

Control #: 19060104 Lab ID: 19060104

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 114 Litchfield Rd Londonderry, NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19060104-001	NOB_058				6/3/201	9 12:00:00 PM	Drinki	ng water
				***	0 117	Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachlo	oroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroet	thane	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-Trichloroet	thane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethe	ene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloroprop	pene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorobe	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichloropr	ropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorobe	enzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylb	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-C	Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoetha	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichlorobenz	zene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloroprop	oane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorobe	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylb	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichlorobenz	zene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloroprop	oane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichlorobenz	zene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloroprop	oane	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-Meth	nyl 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-Me	thyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
	thyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Propa	anol (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-Isopropyltoluer	ne	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
Bromochloromet	thane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichlorom	nethane	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	e	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrachle		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 Ide	ntity			Start Date/T	ime Sampled:	Ма	ntrix
19060104-001	NOB_058				6/3/201	9 12:00:00 PM	Drinki	ng 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-Dichlord	oethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	Э	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.



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

LINKS

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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.

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Laboratory Job ID: 320-51329-1 SDG: 114 Litchfield Rd - Londonderry, NH

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Definitions/Glossary

Toxicity Equivalent Quotient (Dioxin)

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.
В	Compound was found in the blank and sample.
1	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

TEQ

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)

6/27/2019

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Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry SDG: 114 Litchfield Rd - Londonderry, NH

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 1.0° C and 2.4° 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.

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Job ID: 320-51329-1

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry 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	В	1.9	0.33	ng/L		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	JI	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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry SDG: 114 Litchfield Rd - Londonderry, NH

Client Sample ID: NOB_058

M2-6:2 FTS

M2-8:2 FTS

Date Collected: 06/03/19 12:00 Date Received: 06/14/19 09:15 Lab Sample ID: 320-51329-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.6	В	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	JI	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	В	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-methylperfluorooctanesulfonamidoa cetic 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	
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	
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					06/18/19 06:20	
13C3 PFBS	87		50 - 150					06/18/19 06:20	1
13C2 PFHxDA	40	*	50 - 150					06/18/19 06:20	1
	86		50 - 150					06/18/19 06:20	· · · · · · · · · · · · · · · · · · ·
18U2 PFRXS									
18O2 PFHxS 13C4 PFOS	85		50 ₋ 150				06/17/19 06:39	06/18/19 06:20	1

6/27/2019

06/17/19 06:39 06/18/19 06:20

06/17/19 06:39 06/18/19 06:20

50 - 150

50 - 150

108

97

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry 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)							
		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)
320-51329-1	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-1	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Cumpage Lagand									

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

Eurofins TestAmerica, Sacramento

6/27/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry 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 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 301867 Prep Batch: 301643**

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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		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
	140	MD							

(PFHxDA)						
,	MB	MB				
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/NA Prep Batch: 301643
•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

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QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

Analysis Batch: 301867

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry SDG: 114 Litchfield Rd - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 301643

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier U	Jnit	D	%Rec	Limits	
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ıg/L		99	66 - 126	
Perfluorohexanoic acid (PFHxA)	40.0	39.5	r	ıg/L		99	66 - 126	
Perfluoroheptanoic acid (PFHpA)	40.0	40.2	r	ig/L		101	66 - 126	
Perfluorooctanoic acid (PFOA)	40.0	40.0	r	ıg/L		100	64 - 124	
Perfluorononanoic acid (PFNA)	40.0	41.3	r	ıg/L		103	68 - 128	
Perfluorodecanoic acid (PFDA)	40.0	39.2	r	ig/L		98	69 - 129	
Perfluoroundecanoic acid	40.0	38.6	r	ıg/L		96	60 - 120	
(PFUnA)								
Perfluorododecanoic acid	40.0	39.2	r	ıg/L		98	71 - 131	
(PFDoA)				,,				
Perfluorotridecanoic acid	40.0	35.8	r	ıg/L		90	72 - 132	
(PFTriA) Perfluorotetradecanoic acid	40.0	37.1	r	ıg/L		93	68 - 128	
(PFTeA)	40.0	37.1		ıg/L		33	00 - 120	
Perfluorobutanesulfonic acid	35.4	34.7	r	ıg/L		98	73 - 133	
(PFBS)								
Perfluorohexanesulfonic acid	36.4	34.1	r	ıg/L		94	63 - 123	
(PFHxS)								
Perfluoroheptanesulfonic Acid	38.1	40.7	r	ıg/L		107	68 - 128	
(PFHpS) Perfluorooctanesulfonic acid	37.1	36.7	r	ıg/L		99	67 ₋ 127	
(PFOS)	07.1	30.7		ıg/L		33	07 - 127	
Perfluorodecanesulfonic acid	38.6	38.1	r	ig/L		99	68 - 128	
(PFDS)								
N-methylperfluorooctanesulfona	40.0	40.7	r	ıg/L		102	67 - 127	
midoacetic acid (NMeFOSAA)								
6:2 FTS	37.9	39.7		ıg/L		105	66 - 126	
8:2 FTS	38.3	41.7	r	ig/L		109	67 - 127	
Perfluoro-n-hexadecanoic acid	40.0	40.3	r	ıg/L		101	72 - 132	

(PFHxDA)			
	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-301643/3-A

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry SDG: 114 Litchfield Rd - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Dunin Databa 004040

Matrix: Water Analysis Batch: 301867	Spike	LCSD	LCSD				Prep Ty Prep Ba %Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

40.0

38.5

ng/L

96

72 - 132

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 PFHxS	90		50 - 150
13C4 PFOS	83		50 - 150
d3-NMeFOSAA	102		50 - 150

102

101

Perfluoro-n-hexadecanoic acid

(PFHxDA)

M2-6:2 FTS

M2-8:2 FTS

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50 - 150

50 - 150

30

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry SDG: 114 Litchfield Rd - Londonderry, NH

LCMS

Prep Batch: 301643

Lab	o 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	
LC:	S 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
LC	SD 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

Job ID: 320-51329-1 Project/Site: DWGTF_Londonderry SDG: 114 Litchfield Rd - Londonderry, NH

Client Sample ID: NOB_058

Lab Sample ID: 320-51329-1

Matrix: Water

Date Collected: 06/03/19 12:00 Date Received: 06/14/19 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

uthority	Program	1	EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. Th	is list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	midoacetic
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (Pl	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (I	PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PI	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

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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	

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>Test</u>America

THE LEADER IN ENVIRONMENTAL TESTING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN ENVIRONMENTAL TEST	ING
Client Information	Diffs /				ab PM: ohnsor	n, Or	riette	S				Carrier T	racking No	5)		COC No:	
Client Contact: Derek Bennett	Phone: 65 449-20	107/			-Mail: rlette.jc	ohns	on@	testam	nericair	nc.com						Page	
Company New Hampshire Dept of Environ Services									А	nalysi	s Req	ueste	d			Job #:	
Address:	Due Date Request	ed:							T							Preservation Codes:	
29 Hazen Drive Gity:	TAT Requested (da	avel.			41						1					A-HCL M-Hexane	
Concord	TAT nequested (ut	142)-					tes)			13	K /		1 1			B - NaOH N - None C - Zn Acetate O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	1/5	- 1				D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3	
Phone:	PO#:		7		71		1	R	31.7	1	3					F - MeOH R - Na2S2O3 G - Amchior S - H2SO4	
(603) 271-8520 Email:	Purchase Order WO#:	not require	d	-	- P		d Lis	1	1	2	5/1	1	1 1			H - Ascorbic Acid T - TSP Dodecahydri I - Ice U - Acetone	ate
derek.bennett@des.nh.gov	Pay using 3904				SS OF	or No)	ndar			- 6	5				ers	J - DI Water V - MCAA K - EDTA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDERRY	Project #				e (Y	es or	S, Sta			0					containers	L - EDA Z - other (specify)	
Site: Londonderry, NH	SSOW#:				amp	MS/MSD (Yes	PFC IDA - (MOD) PFAS, Standard List (av Analytes)			0	{	M			of cor	Othera	
Londonderly, 1417			Comple	Matrix	Spa	S/MS	MOD			1	7.	M			HIS COLUMN		
			Sample Type	(Wawater,	Filter	m M)-AC								Total Number		
Company of the Company	WEST CONTROL	Sample	(C=comp,	S=solid, O=waste/eil,	pleid	Perform	FC II								otal	******************************	
Sample Identification	Sample Date	Time	G=grab)	tion Code		<u>-</u>	ã	\vdash	+		+				F	Special Instructions/Note:	-
1.1.2 Kimi		17		Diw	1		V									The state of the s	
NOB_DSTE	6-3 19	1200	6		N		X		-		+	-				114 LITCHFIELD RD	
NUB-059	6-3-19	1225	Ŀ	DW	N		X									7 ROLLING RIDGE RD	,
NOB-060	6-5-19	945	6	Dui	N		X									19 JUSTIN CIRCLE	
NOB-061	6-5-19	1110	6	DW	N		X									16 OTTERSON RD	
							15										
					11							A V					
					+								11	+++			
					+	H		-		-	+	+	DESCRIPTION OF				
					\perp		_		4		+	-			MM		
						Ш									IIIII		
													320-51	329 Chain	of C	custody	
Possible Hazard Identification						Sam				fee ma	y be as	sesse	-				
Non-Hazard Flammable Skin Irritant Po	ison B Unkno	own F	Radiological			Sna		eturn To		C Requ	Dis	sposal	By Lab	□ A	rchi	ve For Months	
							Clai	nstructi	ions/Q	C nequ	rement						
Empty Kit Relinquished by:		Date:			Tim	ne:		1	1	10	177.5	-1 1 2 E	thou of Ship				
Relinquished by: Relinquished by: Rule	Date/Time: 6-5-19 / 15	130		Company NOB	5	,	Hecel	ved by:	1	V.	COLD	Hore	100	/5/15	13	5:30 234 NADES	
Helippylished by:	Date/Time /// 2/15		3.0	Company		7	Reads	wearby:	2	4	1	4	7 Dat	e//me //4	5	THE 1430 DES	
Refind this hed by:	Date/Time:	11-		DP) Company		F	Regen	ved by	in	Caul		701	Dat	e/Time:		Company	
Control Code (code (code (code)))									N	ony				11411	19	toso Exporu	
Custody Seal No.:						C	Cooler	rTemper	rature(s)	°C and	Ither Rem	narks	, 7 of			915 50 6/14/19	

Page 16 of 22















TestAmerica Sacramento

880 Riverside Parkway West Sacramento, CA 95605 **Chain of Custody Record**

<u>TestAmerico</u>

THE LEADER IN ENVIRONMENTAL TESTING

Phone (916) 737-5600 Fax (916) 372-1059	Sampler			Ita	D PM:				Ica	rrier Tracking No(s):		COC No.	ENVIRONMENTAL TEST
Client Information	R. Rizz	1		Jo	hnson.	, Orle	tte S		- Oil	trial tracking regist.			
Client Contact: Derek Bennett	603-49	9-200	7		Maii: lette.jol	hnsor	@testam	ericainc.com				Page.	
Company: New Hampshire Dept of Environ Services					THE			Analysis	Reque	ested		Job #:	
Address: 29 Hazen Drive	Due Date Requesi	ed:				17						Preservation Co	odes:
City	TAT Requested (d	ays):			-111			11/1		11111		A - HCL B - NaOH	M - Hexane N - None
Concord State, Zip:	Standard TAT				100	1		_				C - Zn Acetate D - Nitric Acid	O - A≤NaO2 P - Na2O4S
NH, 03302 Phone:	PO #:				41	148	-	1	11 11			E - NaHSO4 F - MeOH	Q - Na2SO3 Fi - Na2S2O3
(603) 271-8520 Email:	Purchase Orde	r not require	d		9	or No)	7	3	TII	1.1 IIII		G - Amchlor H - Ascarbic Acid	S - H2SO4 T - TSP Dodecahydra
derek.bennell@des.nh.qov	Pay using 3904	d .			3 OF	No)		1 3		11111	2	J - Ide J - DI Water	U - Acetone V - MCAA
Project Name: DWGTF_Londonderry	Project #:				e (Ye	no sa		V		1111	container	K - EDTA L - EDA	W - pH 4-5. Z - other (specify)
Site: Londonderry, NH	SSOW#				Sampl	SD (Yes		0	S \	4 1 4 1 1	of con	Other:	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Worder, Scale) Devastate BT=Tissue Ass	Field Filt	Perform MS/MSD (Yes or No)		cc	71,		Total Number	Special I	nstructions/Note:
NOB_062 5 Allison Ly	6-11-19	0930	B	DW	0	X							
NOB-063 29 Beacon St.	6-11-19	1015	6	DW	u	1							
NOB-064 68 AKRANDEV RD.	6-11-19	1055	6	DW	u								
NOB_065	6-11-19	1325	6	5W	N	×							
NOB-066	6-11-19	1410	6	5W	W	X							
NOB- 067	6-11-19	1445	6	SW	N)						112	
NOB-068	6-11-19	1520	6	SW	W)							
NOB-069	6-11-19	1550	6	SW	N	>							
NOB 070	6-12-19	0825	6	SW	N	X							
NOB-071	6-12-19	1000	6	5W	N	}							
					Ш		115						
Possible Hazard Identification Non-Hazard Flammable Skin Imitant Pois Deliverable Requested: I, II, III, IV, Other (specify)	son B Unkn	own $\square_{\tilde{I}}$	Radiological				Return To	cal (A fee may Client ions/QC Require	Disp	essed if samples are osal By Lab		ed longer than i	month) Months
Empty Kit Relinquished-by:		Date:	_		Tim					Method of Shipment	_		
Relinquisted by. / - / /	Pate Frme 14	10131 S F	VIN	Company	1 1000		ceived by:			Date/Time:			Company
Réligioushed by	72 00 N		MINE	Company		Fie	ceived by:	- * . h m	1	Date/Time.	2		Company
Relinguished by A		8:30		Company.	15	Fie	cgived by:	seal sta	Pr.	Date/7/me /	9	8:30	DES 4.7
June -	103/19	14:30	3	Neto	25	<	thingi		(4.79	() (1B)	19	14:30	NHDES
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No.						Co	oler Temper	dure(s) "C and Oth	ier Hemar	1-00/2	400	915 1	11411

Environment Testing TestAmerica



mento Notes

320-51329 Field Sheet

	GSO / OnTrac / Goldstreak / USPS / Of		
is form to record Sample Custody Seal, Coo the job folder with the COC.	oler Custody Seal, Temperature & corrected Temperature & other	r observ	ations
otes:	Therm. ID: AVS Corr. Factor:		
	Ice Wet Gel Ot	her	
	Cooler Custody Seal: 624536		
	Sample Custody Seal:		
	Cooler ID:		
	Temp Observed: [: 00 Corrected:		
		1	
	/		
	NCM Filed: Yes □ No □	l.	
	Ye	s No	NA
	Perchlorate has headspace?		ń
	Alkalinity has no headspace?		D
	CoC is complete w/o discrepancies?		
	Samples received within holding time?		
	Sample preservatives verified?		p
	Cooler compromised/tampered with?	D'	
	Samples compromised/tampered with?		
	Samples w/o discrepancies?	0	
	Sample containers have legible labels?		
	Containers are not broken or leaking?	rD	
	Sample date/times are provided.	ם ז	
	Appropriate containers are used?	- 0	
	Sample bottles are completely filled?		
	Zero headspace?*		Ð
	Multiphasic samples are not present?		
	Sample temp OK?	0	
	Sample out of temp?	6	D

Job:_

Environment Testing

Sacramento Sample Receiving Notes

	4931 8202 1775	Job:
Tracking #_	806430 50 6114119	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. Therm. ID: Ale 3 Corr. Factor: NO Notes: Wet Gel Other Cooler Custody Seal: 80 6430 Sample Custody Seal: _____ Cooler ID: Temp Observed: 2.4°C Corrected: 24°C From: Temp Blank D Sample D NCM Filed: Yes □ No D

	Yes	NO	NA	
Perchlorate has headspace?	D	D	Ø	
Alkalinity has no headspace?			ø	
CoC is complete w/o discrepancies?	Þ		D	
Samples received within holding time?	Þ	D		
Sample preservatives verified?		D	ø	
Cooler compromised/tampered with?		Ø	D	
Samples compromised/tampered with?		Ø		
Samples w/o discrepancies?	ø	D	D	
Sample containers have legible labels?	Ø			
Containers are not broken or leaking?	Ø	D	D	
Sample date/times are provided.	Ø		D	
Appropriate containers are used?	D			
Sample bottles are completely filled?	Ø	D		
Zero headspace?*			Ø	
Multiphasic samples are not present?	D		D	
Sample temp OK?	6	D		
Sample out of temp?		占		
Initials: SO Date: 6/14	119			

*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 Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

True

Samples do not require splitting or compositing.



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:



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 Certification #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

Mathad

SM 4500 NO2B

Analyst

NH

Nitrate

Analyte

Nitrite-N

Analyte	Kesuit	<u>Limit</u>	UIIILS	Allalyzeu	Methou	AllalySL
Nitrate-N	<1.0	1	mg/L	06/03/2019 15:45	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

Hnite

mg/L

Analyzed

06/03/2019 16:40

Reporting

0.01

Docult

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

AQUARIAN ANALYTICAL I/AB70L - / \$\frac{153}{200}\$ West Road Canterbury, NH 03224 Phone: (603)783-9097

11000				A	Di	vis	ion	of	Ne	lso	n 2	Ana	lyt	ica	l, I	LC			(. (Έ		1: 110	onto	1esk	(@a	quariani	abs.con
Turnaround Requirement	s (check one)													Pro	ojec	lnf	orm	atio	n		-						<u></u>	
Please inquire about rush service. If we are able to meet your rush needs with reasonable effort, we will not charge	oles Need Prior Ap ne Day Turnarou One Day Turnarou wo Day Turnarou ree Day Turnarou Normal Turnarou	und und und	F	Projec To	et Na own/s Samp ompr	Site: pler: any:		زِك ع)ou	oen	हिन हिन	ω _ς NH	<u> </u>	VAL		 		Proj	ect R In	voic Pl	e To	o: <u>/</u> o: <u>/</u> e:	441 60	₹ <u>K</u> >2/4/ 3 - 2	H= 15 124-	PAY PAY	RSOI R (ABU & Z 101815	J -Grove.	con
Sample Informa	ation			voc	s		S	voc)s	1		Pe	trole	um			Me	tais		V	Vet :	Che	mist	rv /	inor	gani	CS.	Ī	
Date Rec'd: Rec'd by: Cooler: Cooler: Chlorine: Chlorine: Cooler: Chlorine:	Collection Date/Time	∑ Sample N	<u> </u>	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 Arodars EPA 8082A / 608	Pesticides EPA 80818 / 608	Herbicides EPA 8151A	Drinking Water SOGs (circle) 526.2 4-504.1+508.4515.1	TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 80/15B Gasoline Range Organics	МАДЕР ЕРН	МАДЕР УРН	Petroleum Fingerprint Analysis	X X (CRAS) merals (circle)			Additional Metals (Total / Dissolved):	ite Iuoride		nide)				DS)/ (TSS)	au au	Aquari	an ID
Relinquished by:	Date/Time: 6-3-14 / 2	53	Rec	eived b	y: >				<u> </u>	 	Rece	ipt C	ondit	ions	(lab	orato	ry us	e oni	у):	PRO)	JECT	REQ	UIRI	MEN	VTS ()	Pleas	e com	plete):	
Relinquished by:	Date/Time: Date/Time:		丄	eived b						— [Contalı	etory Suners Intersections	act/Pro	perly L	abele	?: Yes) , No		I	EDD re MCP C Is this I	equired Complia NH "Oc	i? ance re dd Funi	Yes_ quired' d" relat	N ? ted?	No _Yes ≯	<u><_</u> No s_ y	×_No , No		



317 Elm Street Milford, NH 03055

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

Lab ID: 19060104

Date Received: 6/6/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19060104

Lab ID: Date: 7/1/2019

19060104

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Project Name:

MTBE_01

Project Location: Londonderry, NH

19060104 Lab ID:

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"



NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19060104

19060104 Lab ID:

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

7/1/2019

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: 7 Rolling Ridge Rd Londonderry, NH

Sample	Client Sample Identity	у			Start Date/T	ime Sampled:	Ма	ıtrix
19060104-002	NOB_059				6/3/201	9 12:25:00 PM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachl	oroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroe	thane	EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrachl	oroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroe	thane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethe	ene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloroprop	pene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylb	penzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-0	Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichloroben	zene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloroprop	pane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylb	penzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloroben	zene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloroprop	pane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichloroben	zene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloroprop	pane	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-Meth	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Prop	anol (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-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichlorom	nethane	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	е	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrach	loride	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 Ide	ntity			Start Date/T	Ma	atrix	
19060104-002	NOB_059				6/3/201	9 12:25:00 PM	Drinki	ing 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-Dichlord	oethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	adiene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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: 320-51329-2

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

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-51329-2 SDG: 7 Rolling Ridge Rd - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

Qualifiers

RPD

TEF **TEQ**

LCMS Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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.
n	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

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 1.0° C and 2.4° 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.

Job ID: 320-51329-2

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_059

Lab Sample	ID:	320	-513	329-2	2
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.7	В	1.9	0.34	ng/L		_	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	В	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	JI	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_059

Lab Sample ID: 320-51329-2

Matrix: Water

Date Collected: 06/03/19 12:25 Date Received: 06/14/19 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.7	В	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	В	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 06:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	JI	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-methylperfluorooctanesulfonamidoa cetic 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 DEDAA	90		50 150				06/17/10 06:20	06/18/10 06:28	1

(PFHxDA)					
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
1802 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

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-51329-2

Project/Site: DWGTF_Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

		Perc	ent isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
NOB_059	74	89	88	96	94	92	97	100
Lab Control Sample	84	87	90	94	89	85	94	87
Lab Control Sample Dup	86	91	88	93	89	87	91	95
Method Blank	82	91	88	97	90	90	92	93
		Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
	PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
NOB_059	100	84	91	68	93	86	106	108
Lab Control Sample	92	74	92	41 *	86	83	102	102
Lab Control Sample Dup	96	79	88	46 *	90	83	102	102
Method Blank	91	70	88	35 *	87	82	95	105
		Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
	M282FTS							
Client Sample ID	(50-150)							
NOB_059	104							
Lab Control Sample	96							
Lab Control Sample Dup	101							
Method Blank	95							
	NOB_059 Lab Control Sample Lab Control Sample Dup Method Blank Client Sample ID NOB_059 Lab Control Sample Dup Method Blank Client Sample ID NOB_059 Lab Control Sample Dup Method Blank	Client Sample ID (50-150) NOB_059 74 Lab Control Sample 84 Lab Control Sample Dup 86 Method Blank 82 PFDoA Client Sample ID (50-150) NOB_059 100 Lab Control Sample Dup 96 Method Blank 91 M282FTS Client Sample ID (50-150) NOB_059 104 Lab Control Sample 96 Lab Control Sample Dup 101	Client Sample ID (50-150) (50-150) NOB_059 74 89 Lab Control Sample 84 87 Lab Control Sample Dup 86 91 Method Blank 82 91 Perce PFDoA PFTDA Client Sample ID (50-150) (50-150) NOB_059 100 84 Lab Control Sample Dup 96 79 Method Blank 91 70 Perce M282FTS Client Sample ID (50-150) NOB_059 104 104 Lab Control Sample 96 104 Lab Control Sample Dup 101 101	Client Sample ID (50-150) (50-150) (50-150) NOB_059 74 89 88 Lab Control Sample 84 87 90 Lab Control Sample Dup 86 91 88 Method Blank 82 91 88 Perc=nt Isotope PFDoA PFTDA 3C3-PFB\$ Client Sample ID (50-150) (50-150) (50-150) NOB_059 100 84 91 Lab Control Sample Dup 96 79 88 Perc=nt Isotope M282FTS Client Sample ID (50-150) NOB_059 104 104 Lab Control Sample 96 104 Lab Control Sample Dup 96 104 Lab Control Sample Dup 101 101	Client Sample ID (50-150) (50-150) (50-150) (50-150) NOB_059 74 89 88 96 Lab Control Sample 84 87 90 94 Lab Control Sample Dup 86 91 88 93 Method Blank 82 91 88 97 Percent Isotope Dilution Repeated Pilon (50-150) NOB_059 100 84 91 68 Lab Control Sample 92 74 92 41 * Lab Control Sample Dup 96 79 88 46 * Method Blank 91 70 88 35 * Percent Isotope Dilution Repeated Pilon (50-150) M282FTS Client Sample ID (50-150) (50-150) NOB_059 104 104 104 104 Lab Control Sample 96 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104	Client Sample ID (50-150) (50-150) (50-150) (50-150) (50-150) (50-150) NOB_059 74 89 88 96 94 Lab Control Sample 84 87 90 94 89 Lab Control Sample Dup 86 91 88 93 89 Method Blank 82 91 88 97 90 Percent Isotope Dilution Recovery (Accepted Percent Isotope Dilution Recovery) Percent Isotope Dilution Recovery NOB_059 100 84 91 68 93 Lab Control Sample Dup 96 79 88 46 * 90 Method Blank 91 70 88 35 * 87 Percent Isotope Dilution Recovery (Accepted Percent Isotope Dilution Recovery) M282FTS Client Sample ID (50-150) NOB_059 104 Lab Control Sample 96 Lab Control Sample 96 Lab Control Sample 101	Client Sample ID (50-150)	Client Sample ID (50-150)

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

Eurofins TestAmerica, Sacramento

6/27/2019

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry 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 **Client Sample ID: Method Blank** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 301867								Prep Batch:	
Analyte		MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407		2.0		ng/L	— <u>-</u>		06/18/19 05:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		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		ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0		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		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		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		ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L			06/18/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.303		2.0		ng/L		06/17/19 06:39	06/18/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0		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-methylperfluorooctanesulfonamidoa cetic 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
	MB								
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	82		50 - 150					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
1802 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

Lab Sample ID: LCS 320-301643/2-A

M2-8:2 FTS

Analysis Batch: 301867							Prep Type: Total/NA Prep Batch: 301643	
•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130	

50 - 150

95

Eurofins TestAmerica, Sacramento

06/17/19 06:39 06/18/19 05:56

Client Sample ID: Lab Control Sample

Page 8 of 18 6/27/2019

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

8:2 FTS

(PFHxDA)

Perfluoro-n-hexadecanoic acid

Analysis Batch: 301867

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

LCS LCS

Spike

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

Client Sample	ID:	Lab	Control	Sample
		Pren	Type:	Total/NA

109

101

67 - 127

72 - 132

Prep Batch: 301643 %Rec.

Analyte	Added	Result	Qualifier Unit	D %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-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	40.7	ng/L	102	67 - 127	
6:2 FTS	37.9	39.7	ng/L	105	66 - 126	

38.3

40.0

41.7

40.3

ng/L

ng/L

LCS	LCS
-----	-----

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

6/27/2019

Lab Sample ID: LCSD 320-301643/3-A

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

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

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

Matrix: Water Analysis Batch: 301867	Spike	LCSD	LCSD				Prep Ty Prep Ba %Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

40.0

38.5

ng/L

96

72 - 132

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Perfluoro-n-hexadecanoic acid

(PFHxDA)

Eurofins TestAmerica, Sacramento

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QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry 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

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry SDG: 7 Rolling Ridge Rd - Londonderry, NH

Client Sample ID: NOB_059

Lab Sample ID: 320-51329-2

Date Collected: 06/03/19 12:25 Date Received: 06/14/19 09:15

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-2 Project/Site: DWGTF_Londonderry 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.

i thority IAB	Program DoD		EPA Region	Identification Numb	Der Expiration Date 01-20-21
the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority.	This list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT		
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water	N-metl	hylperfluorooctanesulfo	onamidoacetic
				MeFOSAA)	
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFB/	۹)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFD	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (Pl	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Aci	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFI	HpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	I (PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFH	xA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic ac	id (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFN	A)
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid	(PFOS)
EPA 537(Mod)	3535	Water	Perfluc	orooctanoic acid (PFO	A)
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFF	PeA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (Pl	,

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

3

А

6

8

46

11

12

14

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

				_
HE	LEADER IA	ENVIRONM	ENTAL TE	STING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN	ENVIRONMENTA	L TESTING
Client Information	DiffS /				ab PM: ohnsor	n, Orl	lette :	s				Carner	Tracking	No(s)		COC No:		
Client Contact: Derek Bennett	Phone '	07/			-Mail: rlette.jc	hnse	on@i	testame	ericain	c.com						Page:		
Company: New Hampshire Dept of Environ Services									Ai	nalys	is Rec	uest	ed			Job #:		
Address:	Due Date Request	ed:														Preservation C	odes:	
29 Hazen Drive Gity:	TAT Requested (d	ays):	-	-	\dashv		Ш				1			l I		A - HCL B - NaOH	M - Hexane N - None	
Concord							tes)			1	XI				1 1	C - Zn Acetate	O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	34					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO#		_		-1		1	d		15	3			1 1		F - MeOH G - Amphior	R - Na2S2O3 S - H2SO4	
(603) 271-8520	Purchase Order	not require	d		- Q		List	1	1		211					H - Ascarbic Acid	T-TSP Dode	cahydrate
Emall: derek.bennett@des.nh.gov	WO #: Pay using 3904				es or I	(ou	Standard List (Analytes)		1	- 0	ana			1 1	1	J - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDORRAY	Project #				le (Ye)				l dieta	K-EDTA L-EDA	Z - other (spe	city)
Site: Londonderry, NH	SSOW#:				Samp	SD (Y) PFA			0	118	М			00 10			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Winvater, Schoftl, Ocwaste/or	Filtered		PFC IDA - (MOD) PFAS,				7)				Total Mumber		nstructions/N	Note:
	><	><	Preserva	tion Code		X											<	
N03_058	6-3 19	1200	6	Diw	N		X									114 6 176	FIELD RI)
NUB-059	6-3-19	1225	i-	DW	N		X									7 Roun		
NOB_060	6-5-19	945	6	Du	IJ		X									19 JUSTIA		
NoB-061	6-5-19	1110	6	DW	N		X									16 OTTER		
							П					ďΨ						
													1	1 1	manna			
	M L												11111					
					I K													
								1					330	E1320 (Chain of	f Custody		
Possible Hazard Identification						Sam		Dispos			ay be a	ssess	9				- F	
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own F	Radiological	-		Spec		turn To			uiremer	isposa its:	I By La	ıb	- Arc	hive For	Months	
Empty Kit Relinquished by:		Date:			Tin	ne:	-	-	-			M	ethod of	Shipment	_		_	
Relinquished by:	Date/Time:		1	Company		F	Receiv	red by:	11	1	NIT	¥3		Date/Time	7		Company	
Gollow Bule	6-5-19/15	30		NOB	5		1	ch	2	X.	cold	How	je	4/5	/15	15:30 15	4 NADE	5
Heling/ising/by:	1.112119	14	30	Ompany DH)		S	1100	2h	Cau	le-	4.	7.	Date/Time	2/15	544-143	Company	
Reindhished by:	Date/Time:			Company		F	Regelv	ed by	, 5					Date/Time	4/10	1	Company	0.00
Custody Seal No.:	1							Tempera		°C and		marks		1/0//	7110		ENDS	ne
A Vac A No							- GOILI	Sempore		- and	D. 1.10	1 02	7	419		915 50	6/19/19	

Page 16 of 18









Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Client Information	R. Rizz	4		J	ohnsor	. Orle	tte S		Carrier	Tracking No(s):	COC No.	
Client Contact: Derek Bennett	603-49		7	-	Maii: lette.ic	hnso	n@testameric	cainc.com			Page.	
Company: New Hampshire Dept of Environ Services	1005 11	7 200				,,,,,,,,	- 14-34411	Analysis	Reguest	ad	Jab #	
Address:	Due Date Request	ed:	-			100	TIT	Allalysis	riequest		Preservation C	odes:
29 Hazen Drive	TAT Requested (d	ays):		_	-11		111			A + A + A + A	A - HCL B - NaOH	M - Hexane N - None
Concord State, Zip:	Standard TAT				13	1	di l				C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302	The Carlo				1	1		1	11		E - NaHSO4 F - MeOH	O - Na2SO3 FI - Na2S2O3
Phone: 603) 271-8520	PO#: Purchase Orde	r not require	d		6	1	Candibus (Annual Control	2	+11	11111	G - Amchlor H - Ascorbic Acid	S - H2SO4
Email: derek.bennell@des.nh.gov	Wo #: Pay using 3904				Or N	(0)		1 2	1111		J - Ide J - DI Water	U - Acetone V - MCAA
Project Name: DWGTF_Londonderry	Project #:					s or No)		4	-11		K-EDTA L-EDA	W - pH 4-5. Z - other (specify)
Site:	SSOW#T				- ldwi	D (Yes		0			Other:	
Londonderry, NH				*****	- Spa	S/MSD) cr			5	
			Sample Type	Matrix (Waymen)		m MS/	Total and a second	"	3,1		or Special	
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	Sessilid, Dewasta/or	Air)	Perform					oto Cassist	Instructions/Note:
Sample identification	Sample Date			tion Code		X					Special	mstructions/Note:
NOB-062 5 Allison En	6-11-19	0930	G	DW	0	X						
NOB_062 5 Allison Lu. NOB_063 29 Beacon St.	6-11-19	1015	6	DW	0	17	7					
NOB-064 68 AKRANDEV Rd.	6-11-19	1055	6	DW	V)						
NOR_065	6-11-19	1325	6	500	N	X						
NOB-066	6-11-19	1410	6	500	N	1						
NOB- 067	6-11-19	1445	6	SW	N	1					13	
NOB-068	6-11-19	1520	6	SW	N)						
NOB-069	6-11-19	1550	6	SW	N)						
NOB_ 070	6-12-19	0255	6	SW	N	1						
NOB_071	6-12-19	1000	6	500	N	1						
							1111					
Possible Hazard Identification								(A fee may	be assess	ed if samples are retai	ned longer than	ACCURATION OF THE PROPERTY OF
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own H	ladiological	-	-		Return To Co		Disposa	al By Lab Arc	chive For	Months
Empty Kit Relinquished by:		Date:			Tim		ar monwanen	. 44 / 124-115		ethed of Shipment:		
Relinquished by: / - / /			4400	Company			ceived by:			Date/Tine:		Company
The land Theysa		Jobs 5	CIDE	Company Company	15				20			
man 3	Cale/Jims . 14	8:30		NOT	215			12 Sta	ver)	6/13/19	8:30	DES 4.70
Relinquisher	Date Time: 1/9	14:30		Weti	ES		ceived by:	colle	(4.7°C)	Date 7 ime: 1/5	14:30	NHDES
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No.	ody Seals Intact: Custody Seal No.:					Co	oler Temperatur	e(s) °C and Oth		1-00/240	-	LIMIM
M 144 N 11M				_	_	-				100/2	915	Ver 08/04/7016

Job Number: 320-51329-2

SDG Number: 7 Rolling Ridge Rd - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Greator. Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	
s 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 66mm (1/4").	True	
f 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	



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:



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 Certification #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

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	2.9	1	mg/L	06/03/2019 15:45	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	06/03/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

AQUARIAN ANALYTICAL I/AB70L - / \$\frac{153}{200}\$ West Road Canterbury, NH 03224 Phone: (603)783-9097

11000				A	Di	vis	ion	of	Νe	lso	n A	Ana	lyt	ica	l, I	LC			(. (Έ		n: Tr	onto	iesk	(@a	quarian	labs.co	mι
Turnaround Requirement	s (check one)													Pro	ojec	lnf	orm	atio	n		-								٦
Please inquire about rush service. If we are able to meet your rush needs with reasonable effort we will not charge	oles Need Prior Ap Ime Day Turnarou One Day Turnarou Two Day Turnarou ree Day Turnarou Normal Turnarou	und und und	F	Project Information Project #: 95160.00 Project Name: Londonderry we Eval. Town/Site: Londonderry, NH Sampler: DHR Company: NCBIS C/204P Bid Reference: Project Manager: MARK Henderson Report To: MARK Henderson Invoice To: Accounts Payable: Phone: 603-224-4182 E-mail: MHOWASON NOBIS-GROWN										E	Com															
Sample Informa	ation			voc	s		S	VOC)s	1		Pe	trole	um			Me	tais		V	Vet :	Che	mist	trv /	Inor	nan'	ics	T		=
Date Rec'd: Rec'd by: Cooler: Cooler: Chlorine: Pose Neg NA Bottle: TC MINE 40ML HCL LC Sample ID No3 SE No3 SE	Collection Date/Time	Sample N	<u> </u>	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 Arodars EPA 8082A / 608	Pesticides EPA 808/19 / 608	Herbicides EPA 8151A	Drinking Water SOGs (circle) 526.2 4.504.1 + 508.4 516.1	TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 80/15B Gasoline Range Organics	МАДЕР ЕРН	МАДЕР УРН	Petroleum Fingerprint Analysis	X X (CRAS) merals (circle)			Additional Metals (Total / Dissolved):	ite Iuoride		nide)				DS)/ (TSS)	a.	Aqual	rian ID	
Relinquished by:	Date/Time: 6-3-14 / 2	53	Rec	eived b	y: >					 	Rece	ipt C	ondit	ions	(lab	orato	ry us	e oni	у):	PRO)	JECT	REQ	UIRI	EME	NTS (Pleas	ie con	ıplete):		
Relinquished by:	Date/Time:		丄	eived b							Labore Contali	etory Suners Interstinates	pplied act/Pro	Contain	ners?:l	(Yes) 17: Yes	Νο) _{/ Νο}			ISO 17 EDD re MCP O Is this I	7025 ac ∋quired Complia NH "Oc	ccredita i? ance re	ation re Yes_ equired? d" relat	equiredN ? ted?	17	_Yes_ 	<u>×</u> .∾	-		!



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ANALYTICAL REPORT

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

Laboratory Job ID: 320-51329-3

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 role

Authorized for release by: 8/1/2019 10:09:45 AM

Orlette Johnson, Senior Project Manager (484)685-0864

orlette.johnson@testamericainc.com

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

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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

т	C	M	S
_	v	IVI	J

RPD

TEF

TEQ

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry SDG: 19 Justin Circle - Londonderry, NH

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 1.0° C and 2.4° 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" gualifier 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

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry 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		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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.6	В	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	В	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)					
Isotope Dilution	%Recovery Qual	ifier 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
1802 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

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry SDG: 19 Justin Circle - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-3	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-3	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Currente Levend									

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

Job ID: 320-51329-3

Client: New Hampshire Dept of Environmental Serv Project/Site: DWGTF_Londonderry SDG: 19 Justin Circle - Londonderry, NH

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

ND

Lab Sample ID: MB 320-301643/ Matrix: Water Analysis Batch: 301867						•	ole ID: Method Prep Type: To Prep Batch:	otal/NA
	MB MB							
Analyte	Result Qualifie	r RL	MDL		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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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

2.0

0.89 ng/L

Lab Sample	ID: LCS	320-301643/2- <i>A</i>	1
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Perfluoro-n-hexadecanoic acid

Matrix: Water							Prep Type: Total/NA
Analysis Batch: 301867	Spike	LCS	LCS				Prep Batch: 301643 %Rec.
Analyte	Added	_	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

06/17/19 06:39 06/18/19 05:56

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

6:2 FTS

8:2 FTS

M2-8:2 FTS

Analysis Batch: 301867

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry SDG: 19 Justin Circle - Londonderry, NH

Spike

LCS LCS

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

Client Sample I	D:	Lab	Control	Samp	le
		D	T	T - 4 - 1/N	

Pr %

ер	Type: Total/NA	4
rep	Batch: 301643	
Rec.		

Analyte	Added	Result	Qualifier Unit	D %Rec	Limits	
Perfluoropentanoic acid (PFPeA)	40.0	39.6	ng/L		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-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	40.7	ng/L	102	67 - 127	

37.9

38.3

39.7

41.7

40.3

ng/L

ng/L

ng/L

Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0
(FFIXDA)	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 PFHxS	86		50 - 150
13C4 PFOS	83		50 ₋ 150
d3-NMeFOSAA	102		50 - 150
M2-6:2 FTS	102		50 - 150

96

66 - 126

67 - 127

72 - 132

105

109

101

50 - 150

Lab Sample ID: LCSD 320-301643/3-A

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry SDG: 19 Justin Circle - Londonderry, NH

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

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

Matrix: Water Analysis Batch: 301867	Spike	LCSD	LCSD				Prep Ty Prep Ba %Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

38.3

40.0

38.4

38.5

ng/L

ng/L

100

96

67 - 127

72 - 132

	LCSD	LUSD	
Isotope Dilution	%Recovery	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

8:2 FTS

(PFHxDA)

Perfluoro-n-hexadecanoic acid

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
-		

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QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry 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

Job ID: 320-51329-3

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-3 Project/Site: DWGTF_Londonderry SDG: 19 Justin Circle - Londonderry, NH

Client Sample ID: NOB_060

Lab Sample ID: 320-51329-3

Matrix: Water

Date Collected: 06/05/19 09:45 Date Received: 06/14/19 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

i thority IAB	Program DoD		EPA Region	Identification Numb	Der Expiration Date 01-20-21
the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority.	This list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT		
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water	N-metl	hylperfluorooctanesulfo	onamidoacetic
				MeFOSAA)	
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFB/	۹)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFD	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (Pl	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Aci	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFI	HpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	I (PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFH	xA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic ac	id (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFN	A)
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid	(PFOS)
EPA 537(Mod)	3535	Water	Perfluc	orooctanoic acid (PFO	A)
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFF	PeA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (Pl	,

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

Eurofins TestAmerica, Sacramento

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

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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	

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

Phone (916) 737-5600 Fax (916) 372-1059													THE LEADER IN ENVIRONMENTAL TESTING
Client Information	Diff /				PM: hnson	, Orl	ette S			Carrier	Tracking No(s);	COC No:
Client Contact: Derek Bennett	Phone: 65 449-20	107/			Mail: ette.jo	hnsc	on@testar	nericainc.	com				Page:
Company. New Hampshire Dept of Environ Services								Ana	alysis Re	quest	ed		Joh #:
Address:	Due Date Request	led:			11	13	TT		1				Preservation Codes:
29 Hazen Drive City:	TAT Requested (d	avs):		_	+1				1.0	1			A - HCL M - Hexane B - NaOH N - None
Concord		2,0,			1.0		/tes)		1×	/ 1			C - Zn Acetate O - AsNaO2
State, Zip: NH, 03302	Standard TAT				14		Analy		+34				D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
Phone: (603) 271-8520	Po.#. Purchase Orde	r not require	rd		ار		Standard List (Analytes)		nh				F - MeOH
Email:	WO #:				- 8	~	מַ רַ	1	ar				1 - Ice U - Acetone
derek.bennett@des.nh.gov Project Name:	Pay using 3904				-sa/	or No)	tanda		2			l si	
TrustFund_Londonderry DWGTF_ LONDONDERRY						Yes	8,5		231	80 H	1.0	container	L - EDA Z - other (specify)
Site: Londonderry, NH	SSOW#:				Sam	ISD (Yes	O) PF.		181	13		5	
County Identification	Sample Date	Sample Time	Sample Type (C=comp,	Matrix (Wewster, Senolid, Ocwaste/oil, BT=Figure, A=A	d Filtered	Perform MS/M	PFC_IDA - (MOD) PFAS,					Total Number	Consideration of the control of the
Sample Identification	Sample Date	Time		tion Code	"X	-	a						Special Instructions/Note:
NOB_DSE	6-3 19	1200	6	Diw	N		X						114 LACHFIELD RD
	6-3-19	1225	Ġ	DW	hi		X			7			7 ROLLING RIDGE RD
NOB-059	6-5-19	945	6	Dui	1,1	_	X						
NOB_060	The second second						X	+		++	++		19 JUSTIN CIRCLE
NOB_061	6-5-19	1110	6	DW	N		1	++		++			16 OTTERSON RD
					+	-4		++	-1-1-	++	++	+++	
					+	-			-				
	N				++	4							
	4				\perp						OHIO TOTAL SE	nan manan sa	1011 NRI UNI UNI
											1000	29 Chain of	Custody
Possible Hazard Identification					1	Sam	-		e may be	assessi		29 Chair of	-
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own -	Radiological			Cnan	Return 1		Requireme	Disposa	I By Lab	☐ Arci	hive For Months
A COMPANY OF STREET							nar mstruc	ilons/QC	nequireme				
Empty Kit Relinquished by:	In	Date:			Tim		-0/	1	9	100	ethod of Shipn		In access
Relinguished by: The Bula	6-5-19 //S	30		Company Noisis	5		eceived by.	En	li col.	(Hove	1e 4	5/15 I	15:30 23 4 NADES
Helingthister by:	Date/Time:	14	30	DH)		6	Ship of by:	pin o	reule	.1	7. L	113/15	THE 1/30 DES
Reinignshed by:	Date/Time:			Company		R	legerved by		mae	- 17	Date	714/19	Company
Custody Seals Intact: Custody Seal No.:	-			-	-				and biher R		15 .10	1111	915 50 6/19/19

8/1/2019 (Rev. 1)

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Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

Page

17

of 18

8/1/2019 (Rev.

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 5 - H2SO4 G - Amchior (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z - other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Possible Hazard Identification Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

4

Job Number: 320-51329-3

SDG Number: 19 Justin Circle - Londonderry, NH

Login Number: 51329

List Number: 1

needs

List Source: Eurofins TestAmerica, Sacramento

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	True	

True

True

Eurofins TestAmerica, Sacramento

Multiphasic samples are not present.

Samples do not require splitting or compositing.



317 Elm Street Milford, NH 03055

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

Lab ID: 19060104

Date Received: 6/6/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19060104

Lab ID: Date: 7/1/2019

19060104

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Project Name:

MTBE_01

Project Location: Londonderry, NH

19060104 Lab ID:

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"



NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19060104

Lab ID: 19060104

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

7/1/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 19 Justin Circle Londonderry, NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	ıtrix
19060104-003	NOB_060				6/5/201	9 9:45:00 AM	Drinki	ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroe		EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrach		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroe		EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroeth		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorob	Denzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-		EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloropro		EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorob		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethyll		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichlorober		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloropro		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichlorober	•	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloropro		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
	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Prop		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-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichloron		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 Disulfid		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrach		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
			3-					

Page 1 of 3



Parameter Chloroethane Chloroform Chloromethane Cis-1,2-Dichloro Cis-1,3-Dichloro Dibromochloror Dibromomethane	NOB_060	Method	Result		6/5/201	9 9:45:00 AM	Drinki	ng water
Chloroethane Chloroform Chloromethane Cis-1,2-Dichloro Cis-1,3-Dichloro Dibromochloror			Result					ng water
Chloroform Chloromethane Cis-1,2-Dichloro Cis-1,3-Dichloro Dibromochloror		EDA 504.0	itosuit	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloromethane Cis-1,2-Dichloro Cis-1,3-Dichloro Dibromochloron		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Cis-1,2-Dichloro Cis-1,3-Dichloro Dibromochloron		EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Cis-1,3-Dichloro		EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloron	ethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
	propene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromomethan	nethane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomoma	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Methyl ethyl ket	one (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenze	ne	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethe	ne	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.



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 Ustin 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:



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 Certification #VT1005 www.nelsonanalytical.com

Date Reported:

12-Jun-19 16:59

REPORT OF ANALYSIS 119060499.01

Londonderry WQ Eval, Londonderry, NH, #95160.00 NOB 060, 19 Justin Circle

sampled Date: 05-Jun-2019 09:45

Mathad

SM 4500 NO2B

Analyst

NH

Nitrate

Analyte

Nitrite-N

Analyte	Kesuit	<u>Limit</u>	<u>Offics</u>	Allalyzeu	Metriou	Allalyst
Nitrate-N	1.4	1	mg/L	06/05/2019 15:15	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

Hnite

mg/L

Analyzed

06/05/2019 16:10

Reporting

0.01

Decult

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

Tumaround Requirements Rush Sample 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	OTHER	roval d d	Pro Project Tow Sa	Div oject Nan /n/Si ampl	#:_ne:_ler:_	on o	5/6 5/6 5/6	elso O, O	n A	Anal W& T, N	yti 	cal,	, Li Pro		Info	rma	ation ect M	Man epoi voic	age of To	F-r /-	/A// .cco	2 2k -21	Ite	Ph eski	one: @ac	и	03224 -9097 s.com
Sample Informa	tion		VOCs			SVC)Cs	:		Pet	role	um			Met	tals		٧	Vet (Cher	nist	ry / I	nor	ganic	s		
Sample ID NOB-060 19 SUSTIN CUR NOB-061 18 OFTERSON (B)	Collection Date/Time 6-5-19/945 D	E Sample Matrix T A # of Containers	VOCs EFA 82608/8260C Select Parameter only. VOCs EPA 524.2 Drinking Water Select Parameter only.	1.4-dioxane / EDB	SVI (SET PAH ARTOC/8270D Full list / PAH only	EPA 6082A / 608	EPA 80818 / 608	Drinking Water SOCs (circle)	TPH Fuel Cil 81,00M Digsel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	MADEP EPH	MADEP VPH	Petroleum Fingerprint Analysis	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	NI / Cu / Zn / Fe / Mn (drcie) Total / Dissolved	Sodium / Cakium / Magnesium Total / Dissolved	Additional Metals (Total / Dissolved):	X X EPA 300.0; Charles Sulfate X Bronnide (Virtale Atliffe) Fluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW246 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A (gnitability	EPA 1664A HEM Oll and Grease	Total Dissolved Solids (TDS)/ Total Suspended Solids (TSS)	TCLP (please also check off the required analyses)	Aquariar	ı ID
Relinquished by: Relinquished by: Relinquished by:	Date/Time: 6-5-14 / St Date/Time: Date/Time:	07	Received by	y:					Labo Conta Were	eipt Coralory Sainers In	upplied tact/Pr	l Contai operly l ered on	iners? Labele 1 ice?:	: Yes / ed?: Ye Yes /	'No s/No		ily):	ISO EDD MCP Is the Does	17025 requir Comp is NH "	accredi ed? diance i Odd Fu e quote	tation Yes equire nd" rel	equire d? ated?_	d? No Yes Y	Yes_N	<u>≻</u> _N o _No	<i>mplete):</i>	



317 Elm Street Milford, NH 03055

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

Lab ID: 19060104

Date Received: 6/6/2019

Monday, July 01, 2019

Derek S. Bennett

NHDES MtBE Remediation Bureau
29 Hazen Drive, PO Box 95

Concord

NH 03302-0095

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Jay Chrystal - President/Laboratory Director





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19060104

Lab ID: Date: 7/1/2019

19060104

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Project Name:

MTBE_01

Project Location: Londonderry, NH

19060104 Lab ID:

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"



03302-0

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

NHDES MtBE Remediation Bureau

NH

Analytical Results

Date:

Derek S. Bennett

Control #: 19060104

Lab ID: 19060104

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

7/1/2019

Concord

Project Name:

MTBE_01

Project Location: 18 Otterson Rd Londonderry, NH

Sample Client Sample Identity				Start Date/T	ime Sampled:	Matrix		
19060104-004	NOB_061				6/5/201	9 11:10:00 AM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachl	loroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,1-Trichloroe	thane	EPA 524.2	< 0.5 ug/L	200		6/12/2019	0.5	LauraB
1,1,2,2-Tetrachl	loroethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1,2-Trichloroe	thane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,1-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,1-Dichloroethe	ene	EPA 524.2	< 0.5 ug/L	7		6/12/2019	0.5	LauraB
1,1-Dichloroprop	pene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
1,2,4-Trimethylb	penzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dibromo-3-0	Chloropropane	EPA 524.2	< 2 ug/L			6/12/2019	2	LauraB
1,2-Dibromoetha	ane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,2-Dichloroben	zene	EPA 524.2	< 0.5 ug/L	600		6/12/2019	0.5	LauraB
1,2-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,2-Dichloroprop	pane	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3,5-Trimethylb	penzene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloroben	zene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,3-Dichloroprop	pane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
1,4-Dichloroben	izene	EPA 524.2	< 0.5 ug/L	75		6/12/2019	0.5	LauraB
2,2-Dichloroprop	pane	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-Meth	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/12/2019	0.5	LauraB
2-Methyl-2-Prop	panol (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-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Bromodichlorom		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	e	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Carbon Tetrachl		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
			ŭ			т	Dogo 1 of	

Page 1 of 3



Sample	Client Sample Ide	ntity	Start Date/T	ime Sampled:	Matrix			
19060104-004	NOB_061				6/5/201	9 11:10:00 AM	Drinki	ng 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		6/12/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		6/12/2019	0.5	LauraB
Dibromomethan	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	adiene	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 ket	tone (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 Chlo	oride	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	Э	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/12/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/12/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oropropene	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
Trichlorofluoron	nethane	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
•			•					



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.



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

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-51329-4 SDG: 18 Otterson Rd - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

Qualifiers

	~ i		_
	G	ΝI	S
_	_	•••	_

RER

RL

RPD

TEF **TEQ**

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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

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 1.0° C and 2.4° 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" gualifier 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

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_061

Lab Sample ID: 320-513

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.2 B	1.9	0.34	ng/L		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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_061

Lab Sample ID: 320-51329-4

Date Collected: 06/05/19 11:10 **Matrix: Water** Date Received: 06/14/19 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.2	В	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 06:44	
Perfluoropentanoic acid (PFPeA)	3.3		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 06:44	
Perfluorohexanoic acid (PFHxA)	5.0		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 06:44	•
Perfluoroheptanoic acid (PFHpA)	2.2		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 06:44	
Perfluorooctanoic acid (PFOA)	10		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 06:44	•
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		06/17/19 06:39	06/18/19 06:44	•
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		06/17/19 06:39	06/18/19 06:44	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 06:44	•
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 06:44	•
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/17/19 06:39	06/18/19 06:44	
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	В	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			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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			06/18/19 06:44	1
6:2 FTS	ND		9.6		ng/L			06/18/19 06:44	1
8:2 FTS	ND		1.9		ng/L			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	
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	
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
1802 PFHxS	82		50 - 150				06/17/19 06:39	06/18/19 06:44	
13C4 PFOS	81		50 - 150				06/17/19 06:39	06/18/19 06:44	1
d3-NMeFOSAA	93		50 - 150					06/18/19 06:44	1
M2-6:2 FTS	100		50 - 150					06/18/19 06:44	
M2-8:2 FTS	91		50 - 150					06/18/19 06:44	1

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry 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)								
		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)	
320-51329-4	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	
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)		
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	
320-51329-4	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	
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)		
		M282FTS								
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/27/2019

Lab Sample ID: MB 320-301643/1-A

Matrix: Water

Analysis Batch: 301867

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

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

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

Prep Batch: 301643

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

		WD.				
Isotope Dilution	%Recovery	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

MB MB

13C2 PFUnA 13C2 PFDoA 91 50 - 150 06/17/19 06:39 06/18/19 05:56 70 13C2 PFTeDA 50 - 150 06/17/19 06:39 06/18/19 05:56 13C3 PFBS 88 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFHxDA 35 50 - 150 06/17/19 06:39 06/18/19 05:56 1802 PFHxS 87 50 - 150 06/17/19 06:39 06/18/19 05:56 13C4 PFOS 82 50 - 150 06/17/19 06:39 06/18/19 05:56 d3-NMeFOSAA 95 50 - 150 06/17/19 06:39 06/18/19 05:56

105 M2-6:2 FTS 50 - 150 06/17/19 06:39 06/18/19 05:56 M2-8:2 FTS 95 50 - 150 06/17/19 06:39 06/18/19 05:56

Matrix: Water Analysis Batch: 301867

Lab Sample ID: LCS 320-301643/2-A

Prep Type: Total/NA **Prep Batch: 301643** Spike LCS LCS %Rec. Result Qualifier Unit D %Rec Limits

Analyte Added Perfluorobutanoic acid (PFBA) 40.0 40.7 102 70 - 130 ng/L

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

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6/27/2019

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

Analysis Batch: 301867

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prop Batch: 301643

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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	40.0	40.3		ng/L		101	72 - 132	

(PFHxDA)			
	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry SDG: 18 Otterson Rd - Londonderry, NH

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

Prep Type: Total/NA	Client Sample ID): Lab C	ontrol	Sampl	le Dup
Prep Type. Total/NF		P	rep Ty	pe: To	tal/NA

Lab Sample ID: LCSD 320-301643/3-A Matrix: Water Analysis Batch: 301867			C	Client Sa	ample	ID: Lab	Control Prep Ty Prep Ba	pe: Tot	al/NA
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	35.8		ng/L		89	60 - 120	8	30
(PFUnA)				-					
Perfluorododecanoic acid	40.0	38.4		ng/L		96	71 - 131	2	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	34.5		ng/L		86	72 - 132	4	30
(PFTriA)	40.0	36.8		na/l		92	68 ₋ 128	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	30.0		ng/L		92	00 - 120	ı	30
Perfluorobutanesulfonic acid	35.4	37.6		ng/L		106	73 ₋ 133	8	30
(PFBS)				3					
Perfluorohexanesulfonic acid	36.4	32.8		ng/L		90	63 - 123	4	30
(PFHxS)									
Perfluoroheptanesulfonic Acid	38.1	40.1		ng/L		105	68 - 128	2	30
(PFHpS)	07.4	07.0				400	07 407		00
Perfluorooctanesulfonic acid	37.1	37.0		ng/L		100	67 - 127	1	30
(PFOS) Perfluorodecanesulfonic acid	38.6	38.3		ng/L		99	68 - 128	1	30
(PFDS)	00.0	00.0		ng/L		00	00-120		00
N-methylperfluorooctanesulfona	40.0	39.7		ng/L		99	67 - 127	2	30
midoacetic acid (NMeFOSAA)				-					
6:2 FTS	37.9	40.2		ng/L		106	66 - 126	1	30

38.3

40.0

38.4

38.5

ng/L

ng/L

100

96

67 - 127

72 - 132

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

8:2 FTS

(PFHxDA)

Perfluoro-n-hexadecanoic acid

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30

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry 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

Job ID: 320-51329-4 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

IAB	DoD			L2468	01-20-21
The following analytes the agency does not o	•	ort, but the laboratory	v is not certified by the	e governing authority. Th	is list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyte	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	amidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (P	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (F	PFDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (F	PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (P	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Method Description

PFAS for QSM 5.1, Table B-15 Solid-Phase Extraction (SPE)

Project/Site: DWGTF_Londonderry

Job ID: 320-51329-4 SDG: 18 Otterson Rd - Londonderry, NH

TAL SAC

Protocol	Laboratory
EPA	TAL SAC

SW846

Protocol References:

Method

3535

EPA 537(Mod)

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

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

				_
HE	LEADER IA	ENVIRONM	ENTAL TE	STING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN	ENVIRONMENTA	L TESTING
Client Information	DiffS /				ab PM: ohnsor	n, Orl	lette :	s				Carner	Tracking	No(s)		COC No:		
Client Contact: Derek Bennett	Phone '	07/			-Mail: rlette.jc	hnse	on@i	testame	ericain	c.com						Page:		
Company: New Hampshire Dept of Environ Services									Ai	nalys	is Rec	uest	ed			Job #:		
Address:	Due Date Request	ed:														Preservation C	odes:	
29 Hazen Drive Gity:	TAT Requested (d	ays):	-	-	\dashv		Ш				1			l I		A - HCL B - NaOH	M - Hexane N - None	
Concord							tes)			1	XI				1 1	C - Zn Acetate	O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	34					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO#		_		-1		1	d		15	3			1 1		F - MeOH G - Amphior	R - Na2S2O3 S - H2SO4	
(603) 271-8520	Purchase Order	not require	d		- Q		List	1	1		211					H - Ascarbic Acid	T-TSP Dode	cahydrate
Emall: derek.bennett@des.nh.gov	WO #: Pay using 3904				es or I	(ou	Standard List (Analytes)		1	- 0	ana			1 1	1	J - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDORRAY	Project #:			le (Ye)				quictaco	L - EDA Z - other (specify)			
Site: Londonderry, NH	SSOW#:				Samp	Sampl SD (Y	A 1	М			00 10							
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Winvater, Schoftl, Ocwaste/or	Filtered		PFC IDA - (MOD) PFAS,				7)				Total Mumber		nstructions/N	Note:
	><	><	Preserva	tion Code		X											<	
N03_058	6-3 19	1200	6	Diw	N		X									114 6 176	FIELD RI)
NUB-059	6-3-19	1225	i-	DW	N		X									7 Roun		
NOB_060	6-5-19	945	6	Du	IJ		X									19 JUSTIA		
NoB-061	6-5-19	1110	6	DW	N		X									16 OTTER		
							П					ďΨ						
													1	1 1	manna			
	M L												11111					
					I K													
								1					330	E1320 (Chain of	f Custody		
Possible Hazard Identification						Sam		Dispos			ay be a	ssess	9				- E	
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own F	Radiological	-		Spec		turn To			uiremer	isposa its:	I By La	ıb	- Arc	hive For	Months	
Empty Kit Relinquished by:		Date:			Tin	ne:	-	-	-			M	ethod of	Shipment	_		_	
Relinquished by:	Date/Time:			Company		F	Receiv	red by:	11	1	NIT	¥3		Date/Time	7		Company	
Gollow Bule	6-5-19/15	30		NOB	5		1	ch	2	X.	cold	How	je	4/5	/15	15:30 15	4 NADE	5
Heling/ising/by:	1.112119	14	30	Ompany DH)		S	1100	2h	Cau	le-	4.	7.	Date/Time	2/15	544-143	Company	
Reindhished by:	Date/Time:			Company		F	Regelv	ed by	, 5					Date/Time	4/10	1	Company	0.00
Custody Seal No.:	1							Tempera		°C and		marks		1/0//	7110		ENDS	ne
A Vac A No							- GOILI	Sempore		- and	D. 1.10	1 02	7	419		915 50	6/19/19	

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Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Client Information	R. Rizz	4		J	ohnsor	. Orle	tte S		Carrier	Tracking No(s):	COC No.	
Client Contact: Derek Bennett	Phone: 603-499-2007		7	-	Maii: lette.ic	hnso	n@testameric	cainc.com			Page.	
Company: New Hampshire Dept of Environ Services	1005 11	7 200				,,,,,,,,	- 14-34411	Analysis	Reguest	ad	Jab #	
Address:	Due Date Request	ed:	-			100	TIT	Allalysis	riequest		Preservation C	odes:
29 Hazen Drive	TAT Requested (d	ays):		_	-11		111			A + A + A + A	A - HCL B - NaOH	M - Hexane N - None
Concord State, Zip:	Standard TAT FQ #: Purchase Order not required					1	di l				C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302						1		1	11		E - NaHSO4 F - MeOH	O - Na2SO3 FI - Na2S2O3
Phone: 603) 271-8520						1	1	2	+11	11111	G - Amchlor H - Ascorbic Acid	S - H2SO4
Email: derek.bennell@des.nh.gov	Wo #: Pay using 3904				Or N	(Yes or No) Standard List (2(Analyles)	1111	0	J - Ide J - DI Water	U - Acetone V - MCAA		
Project Name:	lame: Project #: F_Londonderry			(Yes	s or No)		4	-11		K-EDTA L-EDA	W - pH 4-5. Z - other (specify)	
Site:	SSOW#T				- ldwi	Yes (Yes			Other:			
Londonderry, NH				*****	- Spa	S/MSD) cr			5	
			Sample Type	Matrix (Waymen)		m MS/	Total and a second	"	3,1		or Special	
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	Sessilid, Dewasta/or	Air)	Perform					oto Cassist	Instructions/Note:
Sample identification	Sample Date			tion Code		X					Special	mstructions/Note:
NOB-062 5 Allison En	6-11-19	0930	G	DW	0	X						
NOB_062 5 Allison Lu. NOB_063 29 Beacon St.	6-11-19	1015	6	DW	0	17	7					
NOB-064 68 AKRANDEV Rd.	6-11-19	1055	6	DW	V)						
NOR_065	6-11-19	1325	6	500	N	X						
NOB-066	6-11-19	1410	6	500	N	1						
NOB- 067	6-11-19	1445	6	SW	N	1					13	
NOB-068	6-11-19	1520	6	SW	N)						
NOB-069	6-11-19	1550	6	SW	N)						
NOB_ 070	6-12-19	0255	6	SW	N	1						
NOB_071	6-12-19	1000	6	500	N	1						
							1111					
Possible Hazard Identification								(A fee may	be assess	ed if samples are retai	ned longer than	A V SUBSTRACT
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own H	ladiological	-	-		Return To Co		Disposa	al By Lab Arc	chive For	Months
Empty Kit Relinquished by:		Date:			Tim		ar monwanen	. 44 / 124-115		ethed of Shipment:		
Relinquished by: / - / /			4400	Company			ceived by:			Date/Tine:		Company
The land Theysa		Jobs 5	CIDE	Company Company	15				20			
man 1 0 8:30 1		NOT	215			12 Sto	ver)	6/13/19	8:30	DES 4.70		
Relinquisher	Date Time: 1/9	14:30		Weti	ES		ceived by:	colle	(4.7°C)) Date 7 ime: 1/5	14:30	NHDES
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No.	7					Co	oler Temperatur	e(s) °C and Oth		1-00/240	-	LIMIM
M 144 N 11M				_	_	-				100/2	915	Ver 08/04/7016

Job Number: 320-51329-4

SDG Number: 18 Otterson Rd - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator. Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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 Ustin 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:



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 Certification #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

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	1.8	1	mg/L	06/05/2019 15:15	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	06/05/2019 16:10	SM 4500 NO2B	NH

Reporting

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

Tumaround Requirements Rush Sample 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	OTHER	roval d d	Pro Project Tow Sa	Div oject Nan /n/Si ampl	#:_ne:_ler:_	on o	5/6 5/6 5/6	elso O, O	n A	Anal W& T, N	yti 	cal,	, Li Pro		Info	rma	ation ect M	Man epoi voic	age of To	F-r /-	/A// .cco	2 2k -21	Ite	Ph eski	one: @ac	и	03224 -9097 s.com
Sample Informa	tion		VOCs			SVC)Cs	:		Pet	role	um			Met	tals		٧	Vet (Cher	nist	ry / I	nor	ganic	s		
Sample ID NOB-060 19 SUSTIN CUR NOB-061 18 OFTERSON (B)	Collection Date/Time 6-5-19/945 D	E Sample Matrix T A # of Containers	VOCs EFA 82608/8260C Select Parameter only. VOCs EPA 524.2 Drinking Water Select Parameter only.	1.4-dioxane / EDB	SVI (SET PAH ARTOC/8270D Full list / PAH only	EPA 6082A / 608	EPA 80818 / 608	Drinking Water SOCs (circle)	TPH Fuel Cil 81,00M Digsel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	MADEP EPH	MADEP VPH	Petroleum Fingerprint Analysis	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	NI / Cu / Zn / Fe / Mn (drcie) Total / Dissolved	Sodium / Cakium / Magnesium Total / Dissolved	Additional Metals (Total / Dissolved):	X X EPA 300.0; Charles Sulfate X Bronnide (Virtale Atliffe) Fluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW246 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A (gnitability	EPA 1664A HEM Oll and Grease	Total Dissolved Solids (TDS)/ Total Suspended Solids (TSS)	TCLP (please also check off the required analyses)	Aquariar	ı ID
Relinquished by: Relinquished by: Relinquished by:	Date/Time: 6-5-14 / St Date/Time: Date/Time:	07	Received by: Receipt Conditions (laboratory use only): Received by: Laboratory Supplied Containers?: Yes / No Containers Intact/Property Labeled?: Yes / No Were samples delivered on ice?: Yes / No Receipt Temperature: Received by: Rece						lo																		

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

LINKS

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Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Toxicity Equivalent Quotient (Dioxin)

Client: New Hampshire Dept of Environmental Serv Project/Site: DWGTF_Londonderry Job ID: 320-51329-5 SDG: 5 Allison Ln - Londonderry, NH

Qualifiers

TEQ

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

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 Percent Recovery Contains Free Liquid Contains No Free Liquid Duplicate Error Ratio (normalized absolute difference)
%R	Percent Recovery Contains Free Liquid Contains No Free Liquid
	Contains Free Liquid Contains No Free Liquid
CFL	Contains No Free Liquid
	·
CNF	Duplicate Error Ratio (normalized absolute difference)
DER	
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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry SDG: 5 Allison Ln - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry 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	JB	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	JB	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry SDG: 5 Allison Ln - Londonderry, NH

Client Sample ID: NOB_062

Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-5 Date Collected: 06/11/19 09:30

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.1	JB	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	JB	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		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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			06/18/19 06:52	1
6:2 FTS	ND		9.6		ng/L			06/18/19 06:52	1
8:2 FTS	ND		1.9		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					06/18/19 06:52	1
13C2 PFHxDA	47		50 ₋ 150					06/18/19 06:52	1
1802 PFHxS	82		50 - 150					06/18/19 06:52	1
13C4 PFOS	78		50 ₋ 150					06/18/19 06:52	1
d3-NMeFOSAA	97		50 - 150					06/18/19 06:52	1
M2-6:2 FTS	105		50 ₋ 150					06/18/19 06:52	
M2-8:2 FTS	95		50 ₋ 150					06/18/19 06:52	1

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry SDG: 5 Allison Ln - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

_			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-5	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-5	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Surrogato Logond									

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

Eurofins TestAmerica, Sacramento

6/27/2019

Lab Sample ID: MB 320-301643/1-A

Matrix: Water

Analysis Batch: 301867

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry SDG: 5 Allison Ln - Londonderry, NH

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

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 301643

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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						•	Prep Type: Total/NA
Analysis Batch: 301867							Prep Batch: 301643
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 18

6/27/2019

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

Perfluoro-n-hexadecanoic acid

(PFHxDA)

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry SDG: 5 Allison Ln - Londonderry, NH

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

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

Analysis Batch: 301867	Spike	LCS	LCS				Prep Batch: 301643 %Rec.
Analyte	Added	Result	Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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

40.0

40.3

ng/L

(11111271)	LCS	LCS	
Isotope Dilution	%Recovery		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
1802 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

Eurofins TestAmerica, Sacramento

72 - 132

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Lab Sample ID: LCSD 320-301643/3-A

Matrix: Water

Analyte

(PFUnA)

(PFDoA)

(PFTriA)

(PFTeA)

(PFBS)

(PFHxS)

(PFHpS)

(PFOS)

(PFDS)

6:2 FTS 8:2 FTS

M2-8:2 FTS

Analysis Batch: 301867

Perfluorobutanoic acid (PFBA)

Perfluoropentanoic acid (PFPeA)

Perfluorohexanoic acid (PFHxA)

Perfluoroheptanoic acid (PFHpA)

Perfluorooctanoic acid (PFOA)

Perfluorononanoic acid (PFNA)

Perfluorodecanoic acid (PFDA)

Perfluoroundecanoic acid

Perfluorododecanoic acid

Perfluorotridecanoic acid

Perfluorotetradecanoic acid

Perfluorobutanesulfonic acid

Perfluorohexanesulfonic acid

Perfluoroheptanesulfonic Acid

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona

midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry SDG: 5 Allison Ln - Londonderry, NH

Spike

Added

40.0

40.0

40.0

40.0

40.0

40.0

40.0

40.0

40.0

40.0

40.0

35.4

36.4

38.1

37.1

38.6

40.0

37.9

38.3

40.0

40.1

37.0

38.3

39.7

40.2

38.4

38.5

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

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

Client Sample ID: Lab Control Sample Dup Prep Type: Total/N/ Prep Batch: 30164: LCSD LCSD %Rec. RPI										
Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
41.1		ng/L		103	70 - 130	1	30			
38.8		ng/L		97	66 - 126	2	30			
40.0		ng/L		100	66 - 126	1	30			
39.4		ng/L		99	66 - 126	2	30			
39.6		ng/L		99	64 - 124	1	30			
42.1		ng/L		105	68 - 128	2	30			
40.2		ng/L		100	69 - 129	2	30			
35.8		ng/L		89	60 - 120	8	30			
38.4		ng/L		96	71 - 131	2	30			
34.5		ng/L		86	72 - 132	4	30			
36.8		ng/L		92	68 - 128	1	30			
37.6		ng/L		106	73 - 133	8	30			
32.8		ng/L		90	63 - 123	4	30			

105

100

99

99

106

100

96

68 - 128

67 - 127

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

(PFHxDA)			
	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 PFHxS	90		50 - 150
13C4 PFOS	83		50 - 150
d3-NMeFOSAA	102		50 - 150
M2-6:2 FTS	102		50 - 150

101

Eurofins TestAmerica, Sacramento

50 - 150

2

1

8

30

30

30

30

30

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry 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

Job ID: 320-51329-5 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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	

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

				_
HE	LEADER IA	ENVIRONM	ENTAL TE	STING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN	ENVIRONMENTA	L TESTING
Client Information	DiffS /				ab PM: ohnsor	nson, Oriette S				Carner Tracking No(s):				COC No:				
Client Contact: Derek Bennett	Phone '	07/			-Mail: rlette.jc	hnse	on@i	testame	ericain	c.com						Page:		
Company: New Hampshire Dept of Environ Services									Ai	nalys	is Rec	uest	ed			Job #:		
Address:	Due Date Request	ed:														Preservation C	odes:	
29 Hazen Drive Gity:	TAT Requested (d	ays):	-	-	\dashv		Ш				1			l I		A - HCL B - NaOH	M - Hexane N - None	
Concord							tes)			1	XI				1 1	C - Zn Acetate	O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	34					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO#		_		-1		1	d		15	3			1 1		F - MeOH G - Amphior	R - Na2S2O3 S - H2SO4	
(603) 271-8520	Purchase Order	not require	d		- Q		List	1	1		211					H - Ascarbic Acid	T-TSP Dode	cahydrate
Emall: derek.bennett@des.nh.gov	WO #: Pay using 3904				es or I	(ou	Standard List (Analytes)		1	- 0	ana			1 1	1	J - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDORRAY	Project #				le (Ye)				l dieta	K-EDTA L-EDA	Z - other (spe	city)
Site: Londonderry, NH	SSOW#:				Samp	SD (Y) PFA			0	118	М			00 10			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Winvater, Schoftl, Ocwaste/or	Filtered		PFC IDA - (MOD) PFAS,				7)				Total Mumber		nstructions/N	Note:
	><	><	Preserva	tion Code		X											<	
N03_058	6-3 19	1200	6	Diw	N		X									114 6 176	FIELD RI)
NUB-059	6-3-19	1225	i-	DW	N		X									7 Roun		
NOB_060	6-5-19	945	6	Du	IJ		X									19 JUSTIA		
NoB-061	6-5-19	1110	6	DW	N		X									16 OTTER		
							П					ďΨ						
													1	1 1	manna			
	M L												11111					
					I K													
								1					330	E1320 (Chain of	f Custody		
Possible Hazard Identification						Sam		Dispos			ay be a	ssess	9				- E	
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own F	Radiological	-		Spec		turn To			uiremer	isposa its:	I By La	ıb	- Arc	hive For	Months	
Empty Kit Relinquished by:		Date:			Tin	ne:	-	-	-			M	ethod of	Shipment	_		_	
Relinquished by:	Date/Time:		1	Company		F	Receiv	red by:	11	1	NIT	¥3		Date/Time	7		Company	
Gollow Bule	6-5-19/15	30		NOB	5		1	ch	2	X.	cold	How	je	4/5	/15	15:30 15	4 NADE	5
Heling/ising/by:	1.112119	14	30	Ompany DH)		Shippin coul 4.7 6/13/14						2/15	544-143	Company			
Reindhished by:	Date/Time:			Company		F	Regalved by:/ Date/Time:						1	Company	0.00			
Custody Seal No.:	1							Tempera		°C and		marks		1/0//	7110		ENDS	ne
A Vac A No							- GOILI	Sempore		- and	D. 1.10	1 02	7	419		915 50	6/19/19	

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Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Client Information	R. Rizz	4		Johnson, Orle			tte S		Carrier Tracking No(s):		COC No.		
Client Contact: Derek Bennett	603-49		7	-	Maii: lette.ic	le.johnson@testamericainc.com				Page.			
Company: New Hampshire Dept of Environ Services	1005 11	7 200				,,,,,,,,	- 14-34411	Analysis	Reguest	ad	Jab #		
Address:	Due Date Request	ed:	-			100	TIT	Allalysis	riequest		Preservation C	odes:	
29 Hazen Drive	TAT Requested (d	ays):		_	-11		111			A + A + A + A	A - HCL B - NaOH	M - Hexane N - None	
Concord State, Zip:	Standard TAT				13	1	di l				C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S	
NH, 03302	The Carlo				1	1		1	11		E - NaHSO4 F - MeOH	O - Na2SO3 FI - Na2S2O3	
Phone: 603) 271-8520	PO#: Purchase Orde	r not require	d		6	1	Candibus (Annual Control	2	+11	11111	G - Amchlor H - Ascorbic Acid	S - H2SO4	
Email: derek.bennell@des.nh.gov	Wo #: Pay using 3904				Or N	(0)		1 2	1111		J - Ide J - DI Water	U - Acetone V - MCAA	
Project Name: DWGTF_Londonderry	Project #:				(Yes	s or No)		4	-11		K-EDTA L-EDA	W - pH 4-5. Z - other (specify)	
Site:	SSOW#T				- ldwi	D (Yes		0			Other:		
Londonderry, NH				*****	- Spa	S/MSD) cr			5		
			Sample Type	Matrix (Waymen)		m MS/	Total and a second	"	3,1		otal Number		
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	Sessilid, Dewasta/or	Air)	Perform					oto Cassist	Instructions/Note:	
Sample identification	Sample Date			tion Code		X					Special	mstructions/Note:	
NOB-062 5 Allison En	6-11-19	0930	G	DW	0	X							
NOB_062 5 Allison Lu. NOB_063 29 Beacon St.	6-11-19	1015	6	DW	0	17	7						
NOB-064 68 AKRANDEV Rd.	6-11-19	1055	6	DW	V)							
NOR_065	6-11-19	1325	6	5W	N	X							
NOB-066	6-11-19	1410	6	500	N	1							
NOB- 067	6-11-19	1445	6	SW	N	1					13		
NOB-068	6-11-19	1520	6	SW	N)							
NOB-069	6-11-19	1550	6	SW	N)							
NOB_ 070	6-12-19	0255	6	SW	N	1							
NOB_071	6-12-19	1000	6	500	N	1							
							1111						
Possible Hazard Identification								(A fee may	be assess	ed if samples are retai	ned longer than	A V SUBSTRACT	
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own H	ladiological	-	-		Return To Co		Disposa	al By Lab And	chive For	Months	
Empty Kit Relinquished by:		Date:			Tim		ar monwanen	. 44 / 124-115		ethed of Shipment:			
Relinquished by: / - / /			4400	Company			ceived by:			Date/Tine:		Company	
The land Theysa		Jobs 5	CIDE	Company Company	15				20				
man 3	Cale/Jims . 14	8:30		NOT	215			12 Sta	ver)	6/13/19	8:30	DES 4.70	
Relinquisher	Date Time: 1/9	14:30		Weti	ES		ceived by:	colle	(4.7°C)) Date 7 ime: 1/5	14:30	NHDES	
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No.	7					Co	oler Temperatur	e(s) °C and Oth		1-00/240	-	LIMIM	
M 144 N 11M				_	_	-				100/2	915	Ver 08/04/7016	

Job Number: 320-51329-5 SDG Number: 5 Allison Ln - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

oreator. Oropeza, Sarvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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 ampered 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	
s 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	
f 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	



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

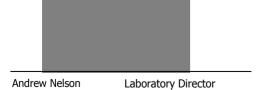
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB

RP190627023

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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.01

Londonderry WQ Eval., Londonderry, NH, #95160.00 NOB 062, 5 Allison Lane

sampled Date: 11-Jun-2019 09:30

SM 4500 NO2B

NH

Nitrate

Nitrite-N

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	06/12/2019 15:05	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

mg/L

06/12/2019 15:55

0.01

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: Town/Site: Sampler	<u>. </u>
Sample Matrix A of Containers Sample Matrix # of Containers A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No No No Containers Intact/Properly Labeled? Yes No Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo Does a price quote apply?YesNo No No No No No No	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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

Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19060219

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location: 5 Allison Ln Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	atrix
19060219-001	NOB_062			_	6/11/20	19 9:30:00 AM	Drinki	ing water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analys
1,1,1,2-Tetrachlor	oethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,1-Trichloroeth	ane	EPA 524.2	< 0.5 ug/L	200		6/20/2019	0.5	LauraB
1,1,2,2-Tetrachlor	oethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,2-Trichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,1-Dichloroethan	е	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1-Dichloroethen	е	EPA 524.2	< 0.5 ug/L	7		6/20/2019	0.5	LauraB
1,1-Dichloroprope	ene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorober	nzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichloropro	pane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,4-Trichlorober		EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
1,2,4-Trimethylber	nzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dibromo-3-Ch		EPA 524.2	< 2 ug/L			6/20/2019	2	LauraB
1,2-Dibromoethan	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dichlorobenze	ene	EPA 524.2	< 0.5 ug/L	600		6/20/2019	0.5	LauraB
1,2-Dichloroethan		EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,2-Dichloropropa	ine	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,3,5-Trichlorober	nzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3,5-Trimethylbe	nzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichlorobenze		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichloropropa	ine	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,4-Dichlorobenze	ene	EPA 524.2	< 0.5 ug/L	75		6/20/2019	0.5	LauraB
2,2-Dichloropropa		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-Methy	l 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-Methoxv-2-Meth	nyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
-	nyl Propane (MTBE)	EPA 524.2	0.58 ug/L	13		6/20/2019	0.5	LauraB
2-Methyl-2-Propar		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	Э	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
Bromochlorometh	ane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromodichlorome		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 Tetrachlor	ride	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

Page 1 of 3



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

Sample Client Sample I		ntity			Start Date/T	ime Sampled:	Ма	ıtrix
19060219-001	NOB_062			<u> </u>	6/11/20	19 9:30:00 AM	Drinki	ng 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-Dichlord	oethene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	adiene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	Э	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
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.

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

LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-51329-6 SDG: 29 Beacon St - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

Qualifiers

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

RER

RPD

TEF

TEQ

RL

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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

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 1.0° C and 2.4° 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.

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Job ID: 320-51329-6

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry 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	O Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.7 B	1.9	0.32	ng/L		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 JB	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

Client Sample ID: NOB_063

Lab Sample ID: 320-51329-6 Date Collected: 06/11/19 10:15

Matrix: Water Date Received: 06/14/19 09:15

Analyte	Result 0		RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.7	3	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	JB	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-methylperfluorooctanesulfonamidoa cetic 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		ng/L		06/17/19 06:39	06/18/19 07:00	1
8:2 FTS	ND		1.9	0.35	-			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					06/18/19 07:00	1
13C2 PFHxDA	48 *	+	50 - 150				06/17/19 06:39	06/18/19 07:00	1
1802 PFHxS	86		50 - 150				06/17/19 06:39	06/18/19 07:00	
13C4 PFOS	81		50 - 150					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					06/18/19 07:00	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-6	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-6	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/27/2019

Lab Sample ID: MB 320-301643/1-A

Matrix: Water

Analysis Batch: 301867

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

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

Prep Type: Total/NA

Prep Batch: 301643

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MB	MB							

i ciliadio il licxadecaliole acid				 		-
(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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 Client Sample ID: Lab							
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 301867							Prep Batch: 301643
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Eurofins TestAmerica, Sacramento

Page 8 of 18

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

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

Client Sample	ID:	Lab	Contro	I Sam	ple
		Dror	Type	Total/	NI A

,									
26			_	-					
26									
26									
24									
28									
29									

8
_

Lab Sample ID: LCS 320-301643/2-A Matrix: Water Analysis Batch: 301867					Client Sample ID: Lab Control Sa Prep Type: Tot				
-			Spike Added		LCS Qualifier	Unit	D	%Rec	Prep Batch: 301643 %Rec. Limits
Analyte Perfluoropentanoic acid (PFPeA)			40.0	39.6	Qualifier	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	40.2		ng/L		100	64 ₋ 124
			40.0	41.3		-			68 - 128
Perfluorononanoic acid (PFNA)						ng/L		103	
Perfluorodecanoic acid (PFDA)			40.0	39.2		ng/L		98	69 - 129
Perfluoroundecanoic acid			40.0	38.6		ng/L		96	60 - 120
(PFUnA) Perfluorododecanoic acid			40.0	39.2		ng/L		98	71 - 131
(PFDoA)			40.0	39.2		iig/L		30	71-131
Perfluorotridecanoic acid			40.0	35.8		ng/L		90	72 - 132
(PFTriA)						3			
Perfluorotetradecanoic acid (PFTeA)			40.0	37.1		ng/L		93	68 - 128
Perfluorobutanesulfonic acid			35.4	34.7		ng/L		98	73 - 133
(PFBS) Perfluorohexanesulfonic acid			36.4	34.1		ng/L		94	63 - 123
(PFHxS) Perfluoroheptanesulfonic Acid			38.1	40.7		ng/L		107	68 - 128
(PFHpS)			37.1	36.7		ng/l		99	67 ₋ 127
Perfluorooctanesulfonic acid (PFOS)						ng/L			
Perfluorodecanesulfonic acid (PFDS)			38.6	38.1		ng/L		99	68 - 128
N-methylperfluorooctanesulfona midoacetic 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
(,	LCS	LCS							
Isotope Dilution	%Recovery	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 50 - 150						
13C2 PFDoA	92		50 - 150 50 - 150						
13C2 PFTeDA	74		50 - 150 50 - 150						
13C3 PFBS	92		50 - 150 50 - 150						
13C2 PFHxDA	92 41	*	50 - 150 50 - 150						
1802 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						

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry SDG: 29 Beacon St - Londonderry, NH

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

Lab Sample ID: LCSD 320-301643/3-A Matrix: Water				onent 3	ample	ID. Lak	Control Prep Ty		
Analysis Batch: 301867							Prep Ba	•	
, many one Dates in earliest	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	35.8		ng/L		89	60 - 120	8	30
(PFUnA)	10.0	00.0		''g''		00	00-120	Ü	00
Perfluorododecanoic acid	40.0	38.4		ng/L		96	71 - 131	2	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	34.5		ng/L		86	72 - 132	4	30
(PFTriA)									
Perfluorotetradecanoic acid	40.0	36.8		ng/L		92	68 - 128	1	30
(PFTeA)	05.4	07.0				400	70 400	•	00
Perfluorobutanesulfonic acid	35.4	37.6		ng/L		106	73 - 133	8	30
(PFBS) Perfluorohexanesulfonic acid	36.4	32.8		ng/L		90	63 - 123	4	30
(PFHxS)	50.4	32.0		11g/L		30	00 - 120	7	50
Perfluoroheptanesulfonic Acid	38.1	40.1		ng/L		105	68 ₋ 128	2	30
(PFHpS)				J					
Perfluorooctanesulfonic acid	37.1	37.0		ng/L		100	67 - 127	1	30
(PFOS)									
Perfluorodecanesulfonic acid	38.6	38.3		ng/L		99	68 - 128	1	30
(PFDS)				_					
N-methylperfluorooctanesulfona	40.0	39.7		ng/L		99	67 - 127	2	30
midoacetic acid (NMeFOSAA)	37.9	40.2		na/l		106	66 - 126	1	30
6:2 FTS 8:2 FTS	38.3	38.4		ng/L ng/L		106	67 - 127		30

40.0

38.5

ng/L

96

72 - 132

LCSD	LCSD
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	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Perfluoro-n-hexadecanoic acid

(PFHxDA)

30

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry 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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-6 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

i thority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry

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

Job ID: 320-51329-6

SDG: 29 Beacon St - Londonderry, NH

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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	

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

				_
HE	LEADER IA	ENVIRONM	ENTAL TE	STING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN	ENVIRONMENTA	L TESTING
Client Information	DiffS /				ab PM: ohnsor	n, Orl	lette :	s				Carner Tracking No(s):				COC No:		
Client Contact: Derek Bennett	Phone '	07/			-Mail: rlette.jc	hnse	on@i	testame	ericain	c.com						Page:		
Company: New Hampshire Dept of Environ Services									Ai	nalys	is Rec	uest	ed			Job #:		
Address:	Due Date Request	ed:														Preservation C	odes:	
29 Hazen Drive Gity:	TAT Requested (d	ays):	-	-	\dashv		Ш				1			l I		A - HCL B - NaOH	M - Hexane N - None	
Concord							tes)			1	XI				1 1	C - Zn Acetate	O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	34					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO#		_		-1		1	d		15	3			1 1		F - MeOH G - Amphior	R - Na2S2O3 S - H2SO4	
(603) 271-8520	Purchase Order	not require	d		- Q		List	1	1		211					H - Ascarbic Acid	T-TSP Dode	cahydrate
Emall: derek.bennett@des.nh.gov	WO #: Pay using 3904				es or I	(ou	Standard List (Analytes)		1	- 0	ana			1 1	1	J - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDORRAY	Project #				le (Ye)				l die	L-EDA	Z - other (spe	city)
Site: Londonderry, NH	SSOW#:				Samp	SD (Y) PFA			0	118	М	of containers					
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Winvater, Schoftl, Ocwaste/or	Filtered		PFC IDA - (MOD) PFAS,				7)				Total Mumber		nstructions/N	Note:
	><	><	Preserva	tion Code		X											<	
N03_058	6-3 19	1200	6	Diw	N		X									114 6 176	FIELD RI)
NUB-059	6-3-19	1225	i-	DW	N		X									7 Roun		
NOB_060	6-5-19	945	6	Du	IJ		X									19 JUSTIA		
NoB-061	6-5-19	1110	6	DW	N		X									16 OTTER		
							П					ďΨ						
													1	1 1	manna			
	M L												11111					
					I K													
								1					330	E1320 (Chain of	f Custody		
Possible Hazard Identification						Sam		Dispos			ay be a	ssess	9				- F	
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own F	Radiological	-		Spec		turn To			uiremer	isposa its:	I By La	ıb	- Arc	hive For	Months	
Empty Kit Relinquished by:		Date:			Tin	ne:	-	-	-			M	ethod of	Shipment	_		_	
Relinquished by:	Date/Time: Company				F	Receiv	red by:	11	1	NIT	¥3		Date/Time	7		Company		
Gollow Bule	6-5-19/15	30		NOB	5		1	ch	2	X.	cold	How	je	4/5	/15	15:30 15	4 NADE	5
Heling/ising/by:	1.112119	14	30	Ompany DH)		Shippin coul 4.7 6/13/14						544-143	Company				
Reindhished by:	Date/Time:			Company		F	Bareauethur! Date/Time:						4/10	1	Company	0.00		
Custody Seal No.:	1							Tempera		°C and		marks		1/0//	7110		ENDS	ne
A Vac A No							- GOILI	Sempore		- and	D. 1.10	1 02	7	419		915 50	6/19/19	

Page 16 of 18









Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Client Information	R. Rizz	4		J	ohnsor	. Orle	tte S		Carrier	Tracking No(s):	COC No.	
Client Contact: Derek Bennett	603-49		7	-	Maii: lette.ic	hnso	n@testameric	cainc.com			Page.	
Company: New Hampshire Dept of Environ Services	1005 11	7 200				,,,,,,,,	- 14-34411	Analysis	Request	ad	Jab #	
Address:	Due Date Request	ed:	-			100	TIT	Allalysis	riequest		Preservation C	odes:
29 Hazen Drive	TAT Requested (d	ays):		_	-11		111			A + A + A + A	A - HCL B - NaOH	M - Hexane N - None
Concord State, Zip:	Standard TAT				13	1	di l				C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302	The Carlo				1	1		1	11		E - NaHSO4 F - MeOH	O - Na2SO3 FI - Na2S2O3
Phone: 603) 271-8520	PO#: Purchase Orde	r not require	d		6	1	Candibus (Annual Control	2	+11	11111	G - Amchlor H - Ascorbic Acid	S - H2SO4
Email: derek.bennell@des.nh.gov	Wo #: Pay using 3904				Or N	(0)		1 3			J - Ide J - DI Water	U - Acetone V - MCAA
Project Name: DWGTF_Londonderry	Project #:				(Yes	s or No)		4	-11		K-EDTA L-EDA	W - pH 4-5. Z - other (specify)
Site:	SSOW#T				- ldwi	D (Yes		0			Other:	
Londonderry, NH				*****	- Spa	S/MSD) cr			5	
			Sample Type	Matrix (Waymen)		m MS/	Total and a second	"	3,1		or Special	
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	Sessilid, Dewasta/or	Air)	Perform					oto Cassist	Instructions/Note:
Sample identification	Sample Date			tion Code		X					Special	mstructions/Note:
NOB-062 5 Allison En	6-11-19	0930	G	DW	0	X						
NOB_062 5 Allison Lu. NOB_063 29 Beacon St.	6-11-19	1015	6	DW	0	17	7					
NOB-064 68 AKRANDEV Rd.	6-11-19	1055	6	DW	V)						
NOR_065	6-11-19	1325	6	500	N	X						
NOB-066	6-11-19	1410	6	500	N	1						
NOB- 067	6-11-19	1445	6	SW	N	1					13	
NOB-068	6-11-19	1520	6	SW	N)						
NOB-069	6-11-19	1550	6	SW	N)						
NOB_ 070	6-12-19	0255	6	SW	N	1						
NOB_071	6-12-19	1000	6	500	N	1						
							1111					
Possible Hazard Identification								(A fee may	be assess	ed if samples are retai	ned longer than	A V SUBSTRACT
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own H	ladiological	-	-		Return To Co		Disposa	al By Lab Arc	chive For	Months
Empty Kit Relinquished by:		Date:			Tim		ar monwanen	. 44 / 124-115		ethed of Shipment:		
Relinquished by: / - / /			4400	Company			ceived by:			Date/Tine:		Company
The land Theysa		JOBS F	CIDE	Company Company	15				20			
man 3	Cale/Jims . 14	8:30		NOT	215			12 Sto	ver)	6/13/19	8:30	DES (4.70
Relinquisher	Date Time: 1/9	14:30		Weti	ES		ceived by:	colle	(4.7°C)) Date 7 ime: 1/5	14:30	NHDES
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No.	7					Co	oler Temperatur	e(s) °C and Oth		1-00/240	-	LIMIM
M 144 N 11M				_	_	-				100/2	915	Ver 08/04/7016

Job Number: 320-51329-6

SDG Number: 29 Beacon St - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Question Answer Comment Radioactivity wasn't checked or is The 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 True Cooler Temperature is acceptable. True True COC is present. True True COC is present. True True COC is filled out in ink and legible. True True COC is filled out with all pertinent information. True True Is the Field Sampler's name present on COC? True True Samples are received within Holding Time. True True Samples are received within Holding Time. True True Sample collection date/times are provided. True True Appropriate sample containers have legible labels. True True Sample collection date/times are provided. True True Sample preservation Verified N/A True There is sufficient vol. for all requested analyses, incl. any req	Creator: Oropeza, Salvador		
meter. The cooler's custody seal, if present, is intact. The cooler's custody seal, if present, is intact. True cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. True Cooler Temperature is acceptable. True Cooler Temperature is recorded. True COCI is present. True COCI is filled out in ink and legible. True COCI 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. Samples are received within Holding Time. True Sample containers have legible labels. True Sample collaction date/times are provided. Appropriate sample containers are used. Sample bottles are completely filled. True Sample Preservation Verified N//A There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). If necessary, staff have been informed of any short hold time or quick TAT rue Multiphasic samples are not present. True Frue Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). If necessary, staff have been informed of any short hold time or quick TAT rue Multiphasic samples are not present.	Question	Answer	Comment
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needs Multiphasic samples are not present. True		True	
	· · · · · · · · · · · · · · · · · · ·	True	
Samples do not require splitting or compositing.	Multiphasic samples are not present.	True	
	Samples do not require splitting or compositing.	True	



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

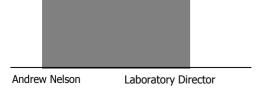
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB

RP190627023

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

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

Date Reported:

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.02

Londonderry WQ Eval., Londonderry, NH, #95160.00 NOB 063, 29 Beacon Street

sampled Date: 11-Jun-2019 10:15

SM 4500 NO2B

NH

Nitrate

Nitrite-N

Analyte	<u>Result</u>	Limit	<u>Units</u>	<u>Analyzed</u>	<u>metnoa</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	06/12/2019 15:05	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

mg/L

06/12/2019 15:55

Reporting

0.01

0.08

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: Town/Site: Sampler	<u>. </u>
Sample Matrix A of Containers Sample Matrix # of Containers A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No No No No No No No N	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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

Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19060219

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location: 29 Beacon St Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19060219-002	NOB_063				6/11/20	19 10:15:00 AM	Drinki	ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,1-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	200		6/20/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		6/20/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorob	Denzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dibromo-3-0		EPA 524.2	< 2 ug/L			6/20/2019	2	LauraB
1,2-Dibromoeth		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/20/2019	0.5	LauraB
1,2-Dichloroeth		EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,2-Dichloropro		EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,3,5-Trichlorob	•	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3,5-Trimethyll		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichlorober		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichloropro		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,4-Dichlorober	•	EPA 524.2	< 0.5 ug/L	75		6/20/2019	0.5	LauraB
2,2-Dichloropro		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
	hyl 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
	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
-	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/20/2019	0.5	LauraB
2-Methyl-2-Prop		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-Isopropyltolue		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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromodichloron		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 Disulfid		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Tetrach		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
STRUTUDO IL IZUTIO		LI / \ UZT.Z	< 0.0 ug/L				0.0	LadiaD

Page 1 of 3



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

Sample	Client Sample Ide	entity			Start Date/T	ime Sampled:	Matrix	
19060219-002	NOB_063				6/11/20	19 10:15:00 AM	Drinki	ng 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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dibromochloron	nethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Dibromomethan	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Isopropylbenzei	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Tetrahydrofuran	1	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-Dichle	oroethene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Trans-1,3-Dichle	oropropene	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
Trichlorofluorom	nethane	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
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.



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

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-51329-7 SDG: 68 Alexander Rd - Londonderry, NH

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1

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.
В	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.
n	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

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

Client Sample ID: NOB_064

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.3 B	1.9	0.33 ng/L		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 JB	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

Client Sample ID: NOB_064

Lab Sample ID: 320-51329-7 Date Collected: 06/11/19 10:55 **Matrix: Water**

Date Received: 06/14/19 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.3	В	1.9	0.33	ng/L		06/17/19 06:39	06/18/19 07:24	
Perfluoropentanoic acid (PFPeA)	2.4		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 07:24	•
Perfluorohexanoic acid (PFHxA)	4.7		1.9	0.55	ng/L		06/17/19 06:39	06/18/19 07:24	
Perfluoroheptanoic acid (PFHpA)	6.6		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 07:24	•
Perfluorooctanoic acid (PFOA)	37		1.9	0.81	ng/L		06/17/19 06:39	06/18/19 07:24	
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	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/17/19 06:39	06/18/19 07:24	•
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	JB	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-methylperfluorooctanesulfonamidoa cetic 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		ng/L			06/18/19 07:24	1
8:2 FTS	ND		1.9		ng/L			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
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	70		50 - 150				06/17/19 06:39	06/18/19 07:24	
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
1802 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	
M2-8:2 FTS	91		50 ₋ 150				06/17/10 06:30	06/18/19 07:24	1

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-7	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-7	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

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6/27/2019

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

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

Lab Sample ID: MB 320-301643/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA**

Analysis Batch: 301867

Analysis Batch: 301867								Prep Batch:	301643
		MB							
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.407	J	2.0		ng/L		06/17/19 06:39		1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L			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-methylperfluorooctanesulfonamidoa cetic 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
	MB	MB							
Isotope Dilution	%Recovery	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					06/18/19 05:56	1
d3-NMeFOSAA	95		50 - 150					06/18/19 05:56	1
M2-6:2 FTS	105		50 - 150					06/18/19 05:56	
			50 150				20	20.404005.50	

Lab Sample ID: LCS 320-301643/2-A

M2-8:2 FTS

Analysis Batch: 301867							Prep Type: Total/NA Prep Batch: 301643
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

50 - 150

95

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06/17/19 06:39 06/18/19 05:56

Client Sample ID: Lab Control Sample

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6/27/2019

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

Perfluoro-n-hexadecanoic acid

(PFHxDA)

Isotope Dilution

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

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

Client Sample I	D: Lab Control Sample
	Pren Type: Total/NA

Analysis Batch: 301867	Spike	LCS	LCS				Prep Batch: 301643 %Rec.
Analyte	Added		Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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

40.0

Limits

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

40.3

ng/L

101

72 - 132

•	-	
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

LCS LCS

%Recovery Qualifier

86

83

102

102

96

6/27/2019

Lab Sample ID: LCSD 320-301643/3-A

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prop Ratch: 3016/3

Matrix: Water Analysis Batch: 301867	Spike	LCSD	LCSD				Prep Ty Prep Ba		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

40.0

38.5

ng/L

	LOOD	LUUD	
Isotope Dilution	%Recovery	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
4000 DED 4			50 450

LCSD LCSD

Perfluoro-n-hexadecanoic acid

(PFHxDA)

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
1802 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

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QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry 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

Job ID: 320-51329-7 Project/Site: DWGTF_Londonderry SDG: 68 Alexander Rd - Londonderry, NH

Client Sample ID: NOB_064

Lab Sample ID: 320-51329-7 Date Collected: 06/11/19 10:55 **Matrix: Water**

Date Received: 06/14/19 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number 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.

uthority	Program	1	EPA Region	Identification Number	Expiration Date			
NAB	DoD			L2468	01-20-21			
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. Th	is list may include analytes for which			
Analysis Method	Prep Method	Matrix	Analyt	е				
EPA 537(Mod)	3535	Water	6:2 FT	S				
EPA 537(Mod)	3535	Water	8:2 FT	S				
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	midoacetic			
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (Pl	FBS)			
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)				
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)			
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)				
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)			
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (I	PFHpS)			
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)			
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)			
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)			
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)			
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)				
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PI	FOS)			
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)				
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA	A)			
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)			
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	.)			
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)			

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

Matrix

Water

Client: New Hampshire Dept of Environmental Serv

Client Sample ID

NOB_064

Project/Site: DWGTF_Londonderry

Lab Sample ID

320-51329-7

Job ID: 320-51329-7 SDG: 68 Alexander Rd - Londonderry, NH

06/11/19 10:55 06/14/19 09:15

2

A

6

8

46

11

13

14

15

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

				_
HE	LEADER IA	ENVIRONM	ENTAL TE	STING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN	ENVIRONMENTA	L TESTING
Client Information	DiffS /				ab PM: ohnsor	n, Orl	lette :	s				Carrier Tracking No(s):				COC No:		
Client Contact: Derek Bennett	Phone '	07/			-Mail: rlette.jc	hnse	on@i	testame	ericain	c.com						Page:		
Company: New Hampshire Dept of Environ Services									Ai	nalys	is Rec	uest	ed			Job #:		
Address:	Due Date Request	ed:														Preservation C	odes:	
29 Hazen Drive Gity:	TAT Requested (d	ays):	-	-	\dashv		Ш				1			l I		A - HCL B - NaOH	M - Hexane N - None	
Concord							tes)			1	XI				1 1	C - Zn Acetate	O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	34					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO#		_		-1		1	d		15	3			1 1		F - MeOH G - Amphior	R - Na2S2O3 S - H2SO4	
(603) 271-8520	Purchase Order	not require	d		- Q		List	1	1		211					H - Ascarbic Acid	T-TSP Dode	cahydrate
Emall: derek.bennett@des.nh.gov	WO #: Pay using 3904				es or I	(ou	Standard List (Analytes)		1	- 0	ana			1 1	1	J - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDORRAY	Project #				le (Ye)				l die	K-EDTA L-EDA	Z - other (spe	city)
Site: Londonderry, NH	SSOW#:				Samp	SD (Y) PFA			0	118	М			00 10			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Winvater, Schoftl, Ocwaste/or	Filtered		PFC IDA - (MOD) PFAS,				7)				Total Mumber		nstructions/N	Note:
	><	><	Preserva	tion Code		X											<	
N03_058	6-3 19	1200	6	Diw	N		X									114 6 176	FIELD RI)
NUB-059	6-3-19	1225	i-	DW	N		X									7 Roun		
NOB_060	6-5-19	945	6	Du	IJ		X									19 JUSTIA		
NoB-061	6-5-19	1110	6	DW	N		X									16 OTTER		
							П					ďΨ						
													1	1 1	manna			
	M L												11111					
					I K													
								1					330	E1320 (Chain of	f Custody		
Possible Hazard Identification						Sam		Dispos			ay be a	ssess	9				- F	
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own F	Radiological	-		Spec		turn To			uiremer	isposa its:	I By La	ıb	- Arc	hive For	Months	
Empty Kit Relinquished by:		Date:			Tin	ne:	-	-	-			M	ethod of	Shipment	_		_	
Relinquished by:	Date/Time:		1	Company		F	Receiv	red by:	11	1	NIT	¥3		Date/Time	7		Company	
Gollow Bule	6-5-19/15	30		NOB	5		1	ch	2	X.	cold	How	je	4/5	/15	15:30 15	4 NADE	5
Heling/ising/by:	1.112119	14	30	Ompany DH)		Shippin coule 4.7. 6/13/14						2/15	544-143	Company			
Reindhished by:	Date/Time:			Company		F	Regained by: Date/Time: ,					1	Company	0.00				
Custody Seal No.:	1							Tempera		°C and		marks		1/0//	7110		ENDS	ne
A Vac A No							- GOILI	Sempore		- and	D. 1.10	1 02	7	419		915 50	6/19/19	

Page 16 of 18









Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Client Information	Information R. RizzA Jo lact: Phone: E-			p PM: ihnson, Orlette S				Carrier Tracking N	Carrier Tracking No(s):		COC No.		
Client Contact: Derek Bennett				Mail: lette.io	hnsor	@testameric	ainc.com				Page.		
npany. w Hampshire Dept of Environ Services								Analysis F	Requested	nuested		Jab #:	
Address:	Due Date Request	ed:			1	10	1-1-1	- Indiyolo (loquesteu		Preservation C	odes:	
29 Hazen Drive	TAT Requested (days):				-11	1		11	1977 4 1		A - HCL B - NaOH	M - Hexane N - None	
Concord State, Zip:	Standard TAT					llytes)					C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S	
NH, 03302				4	- Ann		17			E - NaHSO4 F - MeOH	O - Na2SO3 FI - Na2S2O3		
Phone: 603) 271-8520	Purchase Order not required				6	1 2	1	3	H		G - Amchlor H - Ascorbic Acid	S - H2SO4	
Email: derek.bennell @des.nh.gov	Wo #: Pay using 3904				or N	or No)	Standard List (ADAnalyles)	Ana		99	J - Ide U - Acetone J - DI Water V - MCAA K - EDTA W - PH 4-5 L - EDA Z - other (specify) Other:	U - Acetone V - MCAA	
Project Name: DWGTF_Londonderry	Project #:				(Yes	D (Yes				tainer			
Site:	SSOW#⊤				Jdwe		PFC, IDA - (MOD) PFAS	VII. 1 1 1	of coni	Other:			
Londonderry, NH	Sample Matrix					MS/MS		m	(a)				
		500	Sample Type	(Waysler, Sesolid	Filter	TH M		1 1 7		Total Number			
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	Ωwwasta/oi	Air) E	Perform		444		ota I	Special	Instructions/Note:	
euripe monitivation	><	> <		tion Code		X				X	брески	man de noma note:	
NOB-062 5 Allison 64	6-11-19	0930	G	DW	0	X							
NOB_062 5 Allison Lu. NOB_063 29 Beacon St.	6-11-19	1015	6	DW	1	1							
NOB-064 68 AKRANDEV Rd.	6-11-19	1055	6	DW	U	×							
NOR_065	6-11-19	1325	6	500	N	X							
NOB-066	6-11-19	1410	6	500	N	X							
NOB- 067	6-11-19	1445	6	SW	N	>							
NOB-068	6-11-19	1520	6	SW	N	X							
NOB-069	6-11-19	1550	6	SW	N	X							
NOB 070	6-12-19	0925	6	SW	W	X							
NOB_071	6-12-19	1000	6	500	N	>							
					\top	T							
Possible Hazard Identification								A fee may b	e assessed if san	ples are retaine	ed longer than	1 month)	
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own H	ladiological				Return To Cla		Disposal By Lab	Arch	ive For	Months	
		Instant					ii iiisii ucuona	QO Hequiler					
Empty Kit Relinquished by:		Date:	-	Company	Tim		ceived by:		Method of St	ate/Tine:		Company	
The book Trille		8:30			NoBIS				00 1	00 16			
Rélinduished by	10-			NOTIS		NHDESCAL Spectal			6/13/17 8:30		DES (4.70		
Relinquisher by	Date Time: 1/9	14:30		Weti	Es		ceived by:	coll - 1	4.7°C) (ate/7/me://5	14:30	NHDES	
Custody Seals Intact: Custody Seal No.:	The state of					Co	oler Temperature		Remarke	L,24°L		11411	
Δ Yes Δ No						-			1-0	-12	915	Ver: 08/04/7016	

Job Number: 320-51329-7

SDG Number: 68 Alexander Rd - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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

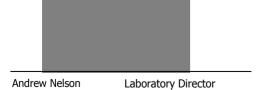
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB

RP190627023

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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.03

Londonderry WQ Eval., Londonderry, NH, #95160.00 NOB 064, 68 Alexander Road

sampled Date: 11-Jun-2019 10:55

Nitrate

<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrate-N	1.2	1	mg/L	06/12/2019 15:05	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	ma/L	06/12/2019 15:55	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: Town/Site: Sampler	<u>. </u>
Sample Matrix A of Containers Sample Matrix # of Containers A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo Does a price quote apply?	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 **Project Name:** MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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"



03302-0

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

Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

NH

29 Hazen Drive, PO Box 95

Derek S. Bennett

Concord

Control #: 19060219

Project Number: DWGTF Londonderry

Project Name: MTBE_01

Project Location: 68 Alexander Rd Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	ıtrix
19060219-003	NOB_064				6/11/20	19 10:55:00 AM	Drinki	ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,1-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	200		6/20/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		6/20/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/20/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
1,3,5-Trichlorob	Denzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichlorober		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
1,4-Dichlorober	•	EPA 524.2	< 0.5 ug/L	75		6/20/2019	0.5	LauraB
2,2-Dichloropro	pane	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-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/20/2019	0.5	LauraB
2-Methyl-2-Prop		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-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Bromodichloron	nethane	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 Disulfid		EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Carbon Tetrach		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 Ide	entity			Start Date/T	ime Sampled:	Ma	atrix
19060219-003	NOB_064				6/11/20	19 10:55:00 AM	Drinki	ing 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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		6/20/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/20/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/20/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/20/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.



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

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..... LINKS

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Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Client: New Hampshire Dept of Environmental Serv Project/Site: DWGTF_Londonderry Job ID: 320-51558-1 SDG: 8 Sara Beth Ln - Londonderry, NH

Qualifiers

LC	MS
Qua	lifie

TEF

TEQ

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
Н	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

7/31/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

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 1.4° 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

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

Client Sample ID: NOB_072

Lab	Sample	ID:	320-	-51	558-
-----	--------	-----	------	-----	------

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.2	JH	1.9	0.33	ng/L		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.2	JH	1.9	0.55	ng/L	1	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.67	JH	1.9	0.24	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	3.6	Н	1.9	0.81	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.87	JH	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.87	JHB	1.9	0.16	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	JН	1.9	0.51	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

Client Sample ID: NOB_072

Lab Sample ID: 320-51558-1 Date Collected: 06/17/19 10:20 Date Received: 06/21/19 09:20

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.2	JH	1.9	0.33	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoropentanoic acid (PFPeA)	ND	Н	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	JH	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	Н	1.9	0.26	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorodecanoic acid (PFDA)	ND	Н	1.9	0.29	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoroundecanoic acid (PFUnA)	ND	Н	1.9	1.0	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorododecanoic acid (PFDoA)	ND	Н	1.9	0.52	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorotridecanoic acid (PFTriA)	ND	Н	1.9	1.2	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorotetradecanoic acid (PFTeA)	ND	Н	1.9	0.27	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorobutanesulfonic acid (PFBS)	0.87	JH	1.9	0.19	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorohexanesulfonic acid (PFHxS)	0.87	JHB	1.9	0.16	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND	Н	1.9	0.18	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorooctanesulfonic acid (PFOS)	1.2	JH	1.9	0.51	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluorodecanesulfonic acid (PFDS)	ND	Н	1.9	0.30	ng/L		07/24/19 07:21	07/25/19 07:59	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	Н	1.9	1.2	ng/L		07/24/19 07:21	07/25/19 07:59	1
6:2 FTS	ND	Н	9.5		ng/L		07/24/19 07:21	07/25/19 07:59	1
8:2 FTS	ND	Н	1.9	0.36	ng/L		07/24/19 07:21	07/25/19 07:59	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND	Н	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	
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	
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	
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
1802 PFHxS	95		50 - 150				07/24/19 07:21	07/25/19 07:59	
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	
M2-8:2 FTS	94		50 ₋ 150					07/25/19 07:59	1

7/31/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry 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

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51558-1	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

٥		4 _			
Su	rroc	ıate	Lec	aen	ıa

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

Lab Sample ID: MB 320-309660/1-A

Matrix: Water

Analysis Batch: 310000

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

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

Prep Type: Total/NA

Prep Batch: 309660

Amaryolo Batom o rocco	MR	МВ						Trop Batom	
Analyte		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-methylperfluorooctanesulfonamidoa cetic 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		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
		MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	90		50 - 150				07/24/19 07:21		1
13C5 PFPeA	93		50 - 150					07/25/19 07:35	1
13C2 PFHxA	93		50 - 150					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					07/25/19 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

Lab Sample ID: LCS 320-309660/2-A

78

95

41

94

88

88

102

105

13C2 PFTeDA

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

13C3 PFBS

Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA **Analysis Batch: 310000** Prep Batch: 309660 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Perfluorobutanoic acid (PFBA) 40.0 42.0 105 70 - 130 ng/L

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

Eurofins TestAmerica, Sacramento

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

07/24/19 07:21 07/25/19 07:35

Page 8 of 19

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-309660/2-A

Matrix: Water

(PFHxDA)

d3-NMeFOSAA

M2-6:2 FTS

M2-8:2 FTS

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

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

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

Analysis Batch: 310000							Prep Batch: 309660
	Spike		LCS				%Rec.
Analyte	Added		Qualifier	Unit	D	%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	40.0	35.5		ng/L		89	60 - 120
(PFUnA)							
Perfluorododecanoic acid	40.0	38.8		ng/L		97	71 - 131
(PFDoA)	40.0	36.4					72 - 132
Perfluorotridecanoic acid (PFTriA)	40.0	30.4		ng/L		91	12 - 132
Perfluorotetradecanoic acid	40.0	38.9		ng/L		97	68 ₋ 128
(PFTeA)				3			
Perfluorobutanesulfonic acid	35.4	34.6		ng/L		98	73 - 133
(PFBS)							
Perfluorohexanesulfonic acid	36.4	33.8		ng/L		93	63 - 123
(PFHxS)	20.4	44.0				440	00 400
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.8		ng/L		110	68 - 128
Perfluorooctanesulfonic acid	37.1	37.4		ng/L		101	67 ₋ 127
(PFOS)				3			
Perfluorodecanesulfonic acid	38.6	40.4		ng/L		105	68 - 128
(PFDS)							
N-methylperfluorooctanesulfona	40.0	36.5		ng/L		91	67 - 127
midoacetic acid (NMeFOSAA)	07.0	04.5				0.4	00 100
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	40.0	40.5		ng/L		101	72 - 132

Isotope Dilution	%Recovery Qualifie	r 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				
1802 PFHxS	97	50 - 150				
13C4 PFOS	89	50 - 150				

LCS LCS

94

105

97

7/31/2019

50 - 150

50 - 150

50 - 150

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

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 Sa	ample	Prep Type: Total/NA Prep Batch: 309660			
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	35.5		ng/L		89	60 - 120	0	30
(PFUnA) 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-methylperfluorooctanesulfona	40.0	39.3		ng/L		98	67 - 127	7	30

37.9

38.3

40.0

35.3

38.5

39.9

ng/L

ng/L

ng/L

93

100

100

66 - 126

67 - 127

72 - 132

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

6:2 FTS

8:2 FTS

(PFHxDA)

30

30

30

2

0

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry SDG: 8 Sara Beth Ln - Londonderry, NH

LCMS

Prep Batch: 309660

La	ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
32	20-51558-1	NOB_072	Total/NA	Water	3535	
М	B 320-309660/1-A	Method Blank	Total/NA	Water	3535	
LC	CS 320-309660/2-A	Lab Control Sample	Total/NA	Water	3535	
LC	CSD 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

Job ID: 320-51558-1 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

uthority	Program	1	EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. Th	is list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	midoacetic
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (Pl	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (I	PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PI	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

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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	

4761 6866 7137 Chain of Custody Record

Client Information	Sampler:	RizzA		Lab Joh		Orlette S	Carrier Tracking No(s):	COC No:
Client Contact: Derek Bennett	Phone:	499-	2007	E-M orle		hrison@testamericainc.com		Page:
Company: New Hampshire Dept of Environ Services		111	200/		T		Requested	Job #:
Address	Due Date Request	ed:	_	_	1	I IA	Thequested	Preservation Codes:
29 Hazen Drive					11	¥		A - HCL M - Hexane
city. Concord	TAT Requested (d	ays):			11	100		B - NaOH N - None C - Zn Acelate O - AsNaO2
tate, Zrp: NH, 03302	Standard TAT					Standard List (2 Analytes)		D - Nitric Acid P - Na2O48 E - NaHSO4 Q - Na2SO3
hone; 603) 271-8520	PO#: Purchase Orde	r not require	d		<u>©</u>	Elst D		F - MeOH R - Na2S203 G - Amchler S - H2S04 H - Ascerbic Acid T - TSP Dedecahydrate
mail: lerek.bennett@des.nh.gov	Wo #: Pay using 3904				No s	or No)		y J - DI Water V - MCAA
roject Name: TristFund_Londonderny: TOUGTF_Lundinderny ite:	Project #:				e (Yes	S, Stan		K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
Site: Londonderry, NH	SSOW#:				Sample Sn /v	(MOD) PFAS.		Other:
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sesolid, Occupatefall, FeTiasue, AsAir	ered MS/M	PFC_IDA - (MOD		Special Instructions/Note:
	><	><	Preservati	2000	\Diamond			X
NOB-072 N+BE-407.3 NOB-073	6-17-19	1020	G	DW	N	X		2 & Sana Bith Lu
M+BE-407.3	6-17-19	1550	6.	DW	W	X		2 7 Gwelner Cint
NOB - 073	6-18-19	1020	6	DW	N	X		2 & Sara B. the La 2 7 Gwilner Circle 2 5 Lilson Pd.
					H	+++++		
					Н			
					Η,	320.51E52.01		
					-	320-51558 Chain of Custod	у —	
					H			
					††			
Possible Hazard Identification					S	Sample Disposal (A fee may	be assessed if samples are re	tained longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois	on B Unkn	own \square_F	Radiological				Disposal By Lab	Archive For Months
eliverable Requested: I, II, III, IV, Other (specify)					S	Special Instructions/QC Requir		
mpty Kit Relinquished by:		Date:			Time		Method of Shigment:	
elinquished by	6-11-19/1	515 (1	5.7°C)	106,3 6	מעיר	MITDES CON SUE	Date Time 18	19 15:15 NHDES
felinquished by:	6/20/19	1350	- 10	UHDI	/	Received by	Date/Time:	Company
telinquisted by.	Date/Time:	1.550	6	ompany	-/	Received by Poling	ples 6 201	19 92D Company
Custody Seals Intact: Custody Seal No.: 80603					_	Cooler Temperature(s) "C and Of		119 920 Company ETA-SAC

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Ver: 08/04/2016

Environment Testing TestAmerica

Sacramento Sample Receiving Notes



Tracking #: 4761 6866 7137

SO 1/PO FO / 2-Day / Ground / UPS / CDO / Courier

Job: ______ GSO OnTrac / Goldstreak / USPS / Other______
Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.

Notes:	Therm. ID: iR STEM Corr. Factor:	-	
NOIES	Ice Wet Gel Othe	er	
	906035	10	
	Sample Custody Seal:		
	Cooler ID:		
	Temp Observed: 1.4°C Corrected:	1.40	U
	From: Temp Blank D Sample 🗹	-	
	NCM Filed: Yes □ No □		
	Yes	No	NA
	Perchlorate has headspace? (Methods 314, 331, 6850)		B .
	Alkalinity has no headspace?		P
	CoC is complete w/o discrepancies?		D
	Samples received within holding time?	D	D
	Sample preservatives verified?	D	2
	Cooler compromised/tampered with?		D
	Samples compromised/tampered with?		
	Samples w/o discrepancies?	D	D
	Sample containers have legible labels?		D
	Containers are not broken or leaking?		D
	Sample date/times are provided.		
	Appropriate containers are used?	0	D
	Sample bottles are completely filled?		
	Zero headspace?*	D	D
	Multiphasic samples are not present?	_ D	ם
	Sample temp OK?	0	ם
	Sample out of temp?	D	ם

\\TACORP\CORP\QA\QA_FACILITIES\SACRAMENTO-QA\DOCUMENT-MANAGEMENT\FORMS\QA-812 SAMPLE RECEIVING NOTES.DOC QA-812 TGT 06/19/2019

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

3 4 5

7

10 11

13

15



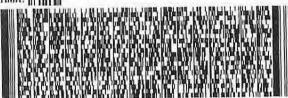
ORIGIN ID:PHDA (603) 271-8483 SHARON LEWANDOWSKI NHDES MTBE REMEDIATION BUREAU 29 HAZEN DR

SHIP DATE: 28DEC18 ACTWGT: 10.00 LB MAN CAD: 0562071/CAFE3211

CONCORD, NH 033016503 UNITED STATES US

TO SAMPLE RECEIVING **TESTAMERICA WEST SACRAMENTO** 880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605 (916) 373 - 5600 REF: \$480 - 123271





SEICI/FIFE/104C

TRK# 4761 6866 7137



Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51558-1

SDG Number: 8 Sara Beth Ln - Londonderry, NH

Login Number: 51558 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator. Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



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 Certification #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

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	06/18/2019 12:00	SM 4500 NO3 D	NH
Nitrite						
Withte		Danastina				
<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	06/18/2019 12:25	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

RP te Rec'd:

80.000 tille: TC

1000 tille: TC

153 West Road Canterbury, NH 03224 Phone: (603)783-9097

E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Jumaround Requirements (check one)	t y					\$4				Ž.	ور بهدای د			F	ioi	ect	Info	mai	ion	24.			W.	د این د ارجاد داشی	notion *	er ver de jare	بالمكار عمواني	2		,
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	Need Prior App Day Turnarour Day Turnarour Day Turnarour Day Turnarour Day Turnarour	nd nd nd		Pro Bid	Project #: 95/60,00 Project Name: Landonsterny Town/Site: Landonsterny Sampler: R, Rizz 4 Company: 110615				Project Ma Rep Invo				Anager: Mark Henryson port To: Mark Henryson poice To: Accounts Rampble Phone: 603-214-4172 E-mail: MHendarone Nobis-Flory				com														
Sample Informat	on			٧	OCs		83	S١	/OC	6		4,76	Pet	role	ım		3 / 13	Met	als		W	et C	hen	istr	y / Ir	olg	anic	S			İ
Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs EPA 8260B/8260C Select Parameter only:	OCs EPA 524.2 Drinking Water retect Parameter only:	1,4-dioxane / EDB 8260B SIM tow tevel	SVOCs EPA 8270C/8270D Full tist / PAH only	PCB Araclors EPA 8082A / 608	Pasticidas EPA 8081B / 608	lerbicides PA 8151A	Drinking Water SOCs (circle) 525.2 / 504.1 / 5087 615.1	TPH Fuel Oil 8100M Diesel Range Organics	IPH Gasoline 8015B Sasoline Range Organics	марер ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	RCRA8 metals circle) Total Tissolved	Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolvod	Sodium / Calcium / Magneslum Total / Dissolved	Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide / Vitrate (Vilfrite Pluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW845 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspanded Solids (TSS)	TCLP (please also check off the required analyses)	Aquaria	n ID	Page 4 of 4
	5-17-19/1020		#/	> %	> 8	4-B	S IL	<u> </u>	<u> </u>								X				X										
NOB-072 M+BE-4073	(-17-19/1550																X														
Relinquished by: Relinquished by:	Date/Time: (a/17)19 Date/Time: Date/Time:	163	O	Received by:				Receipt Conditions (laboratory use only): Laboratory Supplied Containers (%) No Containers Intact/Properly Label (%) (%) No Were samples delivered on ice?: (%) / No				ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Campliance required?YesNo Is this NH "Odd Fund" related?YesNo																			
Relinquished by:												Rec	Receipt Temperature: 2 C				Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM-030916					İ									



317 Elm Street Milford, NH 03055

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

Lab ID: 19060323

Date Received: 6/20/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

Derek S. Bennett

Concord

Control #:

19060323

Lab ID: Date: 19060323 7/3/2019

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

03302-0

Project Name: MTI

MTBE_01

Project Location: Londonderry, NH

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"



7/3/2019

Date:

NHDES MtBE Remediation Bureau

 Control #:
 19060323

 Analytical Results

 Lab ID:
 19060323

Derek S. Bennett

Project Number: DWGTF Londonderry

29 Hazen Drive, PO Box 95

Project Name: MTBE_01

Concord NH 03302-0

Project Location: 8 Sara Beth Ln Londonderry NH

19060323-001 N	IOP 072					ime Sampled:		trix
	NOB_072				6/17/20	19 10:20:00 AM	Drinki	ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachlor	oethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,1-Trichloroetha	ane	EPA 524.2	< 0.5 ug/L	200		6/26/2019	0.5	LauraB
1,1,2,2-Tetrachlor	oethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,2-Trichloroetha	ane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,1-Dichloroethane	е	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1-Dichloroethene	е	EPA 524.2	< 0.5 ug/L	7		6/26/2019	0.5	LauraB
1,1-Dichloroproper	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichloroben	zene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichloroprop	pane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trichloroben	izene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
1,2,4-Trimethylber	nzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dibromo-3-Chl	loropropane	EPA 524.2	< 2 ug/L			6/26/2019	2	LauraB
1,2-Dibromoethan		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichlorobenze	ene	EPA 524.2	< 0.5 ug/L	600		6/26/2019	0.5	LauraB
1,2-Dichloroethane	e	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,2-Dichloropropar	ne	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,3,5-Trichloroben	zene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3,5-Trimethylber	nzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichlorobenze		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichloropropar	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,4-Dichlorobenze	ene	EPA 524.2	< 0.5 ug/L	75		6/26/2019	0.5	LauraB
2,2-Dichloropropar	ne	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-Methy	yl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Methoxy-2-Meth	yl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/26/2019	0.5	LauraB
2-Methyl-2-Propan	nol (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
Bromochlorometha	ane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromodichloromet	thane	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 Tetrachlor	ride	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

Page 1 of 3



Sample	Client Sample Ide	entity			Start Date/T	ime Sampled:	Ma	atrix
19060323-001	NOB_072				6/17/20	19 10:20:00 AM	Drinki	ing water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
Cis-1,3-Dichlore	opropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
,. 0/1101100			- 0.0 dg/ =				0.0	



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.



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

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

Qualifiers

LC	MS
_	

RL

RPD TEF

TEQ

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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

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 1.4° 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" gualifier 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

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

Client Sample ID: NOB_073

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.75 J	1.8	0.32 ng/L		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 JI	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 JIB	1.8	0.15 ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.49 JI	1.8	0.49 ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry 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

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Lab Sample ID: 320-51558-3

Matrix: Water

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	JI	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	JIB	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	JI	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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.8		ng/L		06/27/19 05:00	06/30/19 07:32	1
6:2 FTS	ND		9.0	1.8	ng/L			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

7/16/2019

06/27/19 05:00 06/30/19 07:32

06/27/19 05:00 06/30/19 07:32

06/27/19 05:00 06/30/19 07:32

06/27/19 05:00 06/30/19 07:32

06/27/19 05:00 06/30/19 07:32

06/27/19 05:00 06/30/19 07:32

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

51

74

73

80

87

87

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51558-3	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

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Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

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

Ma	b Sample ID: MB 320-304060/1-A trix: Water alysis Batch: 304828	Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 304060
	MB MB	•

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 304828	Pren Batch: 304060

tch: 304060 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Perfluorobutanoic acid (PFBA) 40.0 41.3 ng/L 103 70 - 130

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Lab Sample ID: LCS 320-304060/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 304828

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

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

Client Sample ID: L	ab Control Sample
F	Prep Type: Total/NA
	Prep Batch: 304060

	Spike	LCS	LCS		%Rec.	
Analyte	Added	Result	Qualifier Unit	D %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	40.0	37.0	ng/L	92	60 - 120	
(PFUnA) 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-methylperfluorooctanesulfona midoacetic 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	40.0	40.8	ng/L	102	72 - 132	

,	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-304060/3-A

Matrix: Water

(PFHxDA)

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry SDG: 5 Wilson Rd - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 304060

Analysis Batch: 304828							Prep Ba	atch: 30)4060
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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	40.0	39.3	I	ng/L		98	72 - 132	4	30

LCSD	LCSD
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	LCSD	LCSD		
Isotope Dilution	%Recovery	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	
1802 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	

Eurofins TestAmerica, Sacramento

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

Job ID: 320-51558-3 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perflu	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

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

4761 6866 7137

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. RizzA Johnson, Orlette S Client Information Client Contact: Paga 603-499-2007 Derek Bennett orlette.johnson@testamericainc.com Job #: **Analysis Requested** New Hampshire Dept of Environ Services Address Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M-Hexane City: TAT Requested (days): B-NaOH N - None PFC IDA - (MOD) PFAS, Standard List (A Chalytes) Concord C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 NH, 03302 F - MeOH H - Na2S203 G - Amehler 5-H2504 Purchase Order not required (603) 271-8520 H - Ascorbic Acid T - TSP Dodecahydrate U - Acetone - ice Perform MS/MSD (Yes or No) derek.bennett@des.nh.gov Pay using 3904 J - DI Water V-MCAA K-EDTA W - pH 4-5 Project #: L-EDA Z - other (specify) ITUSTEUNG Landondorny DUGTF-Lundondern SSOWin Other: Londonderry, NH Number Matrix Sample Type Total Sample (C=comp. Sample Identification Sample Date Time G=grab) Special Instructions/Note: Preservation Code: NOB-072 DW M+BE-407.3 6 DW NOR _ 073 DW Possible Hazard Identification Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by NHDES 6 /21 ETA-SAC 920 Custody Spals Intact: Custody Seal No.: Cooler Temperature(s) "C and Other Remarks: 806035 A/Yes/ A No

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Ver: 08/04/2016

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Job Number: 320-51558-3 SDG Number: 5 Wilson Rd - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 51558

List Number: 1

Creator: Oropeza, Salvador

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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

Lab ID: 19060323

Date Received: 6/20/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

Derek S. Bennett

Concord

Control #:

19060323

Lab ID: Date: 19060323 7/3/2019

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

03302-0

Project Name: MTI

MTBE_01

Project Location: Londonderry, NH

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

Analytical Results

Lab ID:

Date:

19060323

7/3/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19060323

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location: 5 Wilson Rd Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	ıtrix
19060323-003	NOB_073				6/17/20	6/17/2019 10:20:00 AM		ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,1-Trichloroe		EPA 524.2	< 0.5 ug/L	200		6/26/2019	0.5	LauraB
1,1,2,2-Tetrach		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,2-Trichloroe		EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,1-Dichloroeth		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1-Dichloroeth		EPA 524.2	< 0.5 ug/L	7		6/26/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichlorob	Denzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dibromo-3-		EPA 524.2	< 2 ug/L			6/26/2019	2	LauraB
1,2-Dibromoeth		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/26/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,2-Dichloropro		EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,3,5-Trichlorob		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3,5-Trimethyll		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichlorober		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichloropro		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,4-Dichlorober	•	EPA 524.2	< 0.5 ug/L	75		6/26/2019	0.5	LauraB
2,2-Dichloropro		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
	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/26/2019	0.5	LauraB
2-Methyl-2-Prop		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-Isopropyltolue		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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Bromodichloron		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 Disulfid		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Carbon Tetrach		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
		<u></u>	. 5.5 dg/L				5.0	

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ма	atrix
19060323-003	NOB_073				6/17/20	19 10:20:00 AM	Drinki	ng 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	ride	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	e	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.



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, #95160.0	0: 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:



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 Certification #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

	itı		

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	06/18/2019 15:50	SM 4500 NO3 D	NH
Nitrito						

Nitrite

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	06/18/2019 16:35	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Uranium	428	1	ug/L	06/27/2019 13:01	EPA 200.8	RT

Date Rec'd 1/8 1/9 time Rec'd 1/15 Temp Rec'd: 4.5 AQUARIAN ANALYTICAL LAB
Rec'd by: A W Location: 7
Cooler: N Ice: 53 West Road Canterbury, NH 03224 Phone: (603)783-9097 RP190627084 E-mail: frontdesk@aquarianlabs.com A Division of Nelson Analytical, LLC **Project Information** Turnaround Requirements (check one) Rush Samples Need Prior Approval Project #: 95/60, 00 Project Manager: Mark Hunderson Same Day Turnaround Project Name: fon Londerky WB Eval.
Town/Site: fon Londerky WH
Sampler: R. RizzA Please inquire about Report To: Mark Handerson rush service. If we are One Day Turnaround Invoice To: Accounts Payable able to meet your rush needs with reasonable Two Day Turnaround Phone: 603-224-418 effort, we will not charge E-mail: Mitenderson & Mahis-Evous. Com Three Day Turnaround Company: Nobi's Evous a rush fee, Please call Bid Reference: ahead. Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Wet Chemistry / Inorganics Metals # of Containers MADEP VPH Collection Sample ID Date/Time Aquarian ID 1108 - 073 Date/Time: 0 11/5 PROJECT REQUIREMENTS (Please complete): Receipt Conditions (laboratory use only): ISO 17025 accreditation required? _____Yes____No Received by: Date/Time: Relinguished by: EDD required? Yes No Laboratory Supplied Containers?: Yes 1/4 No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled : 769 / No Is this NH "Odd Fund" related?____Yes____No Were samples delivered on ice2: Yes No Receipt Temperature: 7,5 c Date/Time: Received by: Relinguished by: Does a price quote apply? Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916



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

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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

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry SDG: 25 Coteville Rd - Londonderry, NH

Qualifiers

RPD

TEF **TEQ**

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

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Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry SDG: 25 Coteville Rd - Londonderry, NH

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 1.6° 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" gualifier 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

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry 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		1.8	0.32	ng/L		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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	1.3	J	1.8	0.32	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluoropentanoic acid (PFPeA)	2.0		1.8	0.45	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorohexanoic acid (PFHxA)	3.3		1.8	0.54	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.8	0.23	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorooctanoic acid (PFOA)	11		1.8	0.79	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorodecanoic acid (PFDA)	ND		1.8	0.29	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.51	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.27	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorobutanesulfonic acid (PFBS)	13		1.8	0.18	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorohexanesulfonic acid (PFHxS)	3.2	В	1.8	0.16	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.18	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorooctanesulfonic acid (PFOS)	2.3	I	1.8	0.50	ng/L		07/03/19 05:43	07/04/19 17:33	
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.30	ng/L		07/03/19 05:43	07/04/19 17:33	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.8		ng/L			07/04/19 17:33	
6:2 FTS	ND		9.2		ng/L			07/04/19 17:33	
8:2 FTS	ND		1.8	0.35	-			07/04/19 17:33	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.82	ng/L		07/03/19 05:43	07/04/19 17:33	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	80		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C5 PFPeA	93		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C2 PFHxA	97		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C4 PFHpA	101		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C4 PFOA	97		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C5 PFNA	96		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C2 PFDA	97		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C2 PFUnA	100		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C2 PFDoA	93		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C2 PFTeDA	87		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C3 PFBS	92		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C2 PFHxDA	54		50 - 150				07/03/19 05:43	07/04/19 17:33	
1802 PFHxS	98		50 - 150				07/03/19 05:43	07/04/19 17:33	
13C4 PFOS	100		50 - 150				07/03/19 05:43	07/04/19 17:33	
d3-NMeFOSAA	100		50 - 150				07/03/19 05:43	07/04/19 17:33	
M2-6:2 FTS	122		50 - 150				07/03/19 05:43	07/04/19 17:33	
M2-8:2 FTS	116		50 ₋ 150					07/04/19 17:33	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry 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)								
		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)	
320-51801-6	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 L						imits)		
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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	
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)		
		M282FTS								
Lab Sample ID	Client Sample ID	(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

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Lab Sample ID: MB 320-305366/1-A

Matrix: Water

Analysis Batch: 305690

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry SDG: 25 Coteville Rd - Londonderry, NH

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

Prep Type: Total/NA

Prep Batch: 305366

	MB I	MB							
Analyte	Result (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-methylperfluorooctanesulfonamidoa cetic 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
	MR	MR							

MB	MB	

	MB	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	86		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C5 PFPeA	92		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C2 PFHxA	88		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C4 PFHpA	94		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C4 PFOA	98		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C5 PFNA	96		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C2 PFDA	97		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C2 PFUnA	90		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C2 PFDoA	87		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C2 PFTeDA	82		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C3 PFBS	90		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C2 PFHxDA	39	*	50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
1802 PFHxS	90		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
13C4 PFOS	92		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
d3-NMeFOSAA	95		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
M2-6:2 FTS	110		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1
M2-8:2 FTS	95		50 - 150	07/03/19 05:43 0	7/04/19 16:29	1

Lab Sample ID: LCS 320-305366/2-A				Clier	nt Sai	mple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 305690							Prep Batch: 305366
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	42.8		ng/L		107	70 - 130

Eurofins TestAmerica, Sacramento

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QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-305366/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 305690

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry SDG: 25 Coteville Rd - Londonderry, NH

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

Client Sample II	D:	Lab	Co	ntro	l Samp	le
		Pre	o Ty	ype:	Total/N	Α

P	rep Ty	/pe: T	otal/NA
F	rep B	atch:	305366
0,	Poc		

Analysis Batch: 500000	Spike	LCS	LCS		%Rec.
Analyte	Added		Qualifier Unit	D %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-methylperfluorooctanesulfona midoacetic 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	40.0	41.0	ng/L	103	72 - 132

LCS	LCS
-----	-----

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry SDG: 25 Coteville Rd - Londonderry, NH

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	Onilla	1.000	LCSD	Client Sa	ample	ID: Lat	Prep Ba	pe: Tot	al/NA
Analyte	Spike Added	_	Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)		42.3	Qualifier	ng/L		106	70 - 130	1 KPD	30
Perfluoropentanoic acid (PFPeA)	40.0	41.0		ng/L		100	66 ₋ 126	5	30
Perfluorohexanoic acid (PFHxA)	40.0	42.9		•		102	66 - 126	8	30
·				ng/L					
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	40.0	42.3		ng/L		106	71 - 131	3	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	41.3		ng/L		103	72 - 132	1	30
(PFTriA)	40.0	40.0		//		400	00 400	4	20
Perfluorotetradecanoic acid	40.0	40.0		ng/L		100	68 - 128	1	30
(PFTeA) Perfluorobutanesulfonic acid	35.4	40.7		ng/L		115	73 - 133	6	30
(PFBS)									
Perfluorohexanesulfonic acid	36.4	35.6		ng/L		98	63 - 123	0	30
(PFHxS)	00.4	44.0				400	00 400	•	00
Perfluoroheptanesulfonic Acid	38.1	41.3		ng/L		109	68 - 128	6	30
(PFHpS) Perfluorooctanesulfonic acid	37.1	35.4		ng/L		95	67 - 127	5	30
(PFOS)	37.1	55.4		11g/L		33	07 - 127	3	30
Perfluorodecanesulfonic acid	38.6	37.5		ng/L		97	68 - 128	1	30
(PFDS)				J					
N-methylperfluorooctanesulfona	40.0	39.6		ng/L		99	67 - 127	3	30
midoacetic acid (NMeFOSAA)									
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

(PFHXDA)			
	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry 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

Job ID: 320-51801-6 Project/Site: DWGTF_Londonderry SDG: 25 Coteville Rd - Londonderry, NH

Client Sample ID: NOB_074

Lab Sample ID: 320-51801-6 Date Collected: 06/26/19 08:20 **Matrix: Water**

Date Received: 06/27/19 09:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

uthority	Program	1	EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. Th	is list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	midoacetic
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (Pl	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (I	PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PI	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

Protocol	Laboratory
FPA	TAL SAC

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	

Page 16 of 21

7/16/2019

880 Riverside Parkway West Sacramento, CA 95605

Phone (916) 737-5600 Fax (916) 372-1059

Chain of Custody Record 4917 8544 6463

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler R	Pin .	1		hnsor	n, O	riette S	Carrier Tracking No(s):		COC No:
Client Contact: Derek Bennett	Phone:	199-	5007	100	Mail:	ohns	son@testamericainc.com			Page:
Company:	1003-7	11 ~	007	lui.	- Contact	OTHE		anning the state of		Job #
New Hampshire Dept of Environ Services Address:	Due Date Requeste	ed:		-			Analysis F	requested	-	Preservation Codes:
29 Hazen Drive	TAT Requested (da	web.			-17					A - HCL M - Hexane
City: Concord	TAT Requested (da	iys):					(sa)			B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Z.p.: NH, 03302	Standard TAT						Q Analy			D - Nitric Acid P - Na2O4S E - NaHSO4 O - Na2SO3 F - MeOH R - Na2S2O3
Phone: (603) 271-8520	the second of th	Order not required					List (#Enalytes)			G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email: derek.bennett@des.nh.gov	Wo #: Pay using 3904					(ou	Standard		2	I - Ice U - Acetone J - DI Water V - MCAA
Project Name: TrustFund_Landenderry DWGTF_Condenderry	Project #:				e (Yes	(Yes or I	s, Stan		containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Site: Londonderry, NH	SSOW#:				Sample (Yes	SD	D) PFAS,		of con	Other:
Comple Mentification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, Senolid, O=Waste/oil	ield Filtered	Perform MS/M	PFC IDA - (MOD)		Total Number	Special Instructions/Note:
Sample Identification	Sample Date	***		tion Code		Ż			×	Special instructions/Note:
M+BE- 1125	6-20-19	1155	6	DW	N		X		2	19 Tetan Drive
					012					
					1					
						ini				
								an month		
					T				1	
							320-51801 Chain of Cu	ustody	+	
					+				+	
Possible Hazard Identification				-	-	Sar	mple Disposal (A fee may b	e assessed if samples are	retaine	ed longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois	on B Unkno	own \square_p	Radiological				Return To Client	Disposal By Lab		ive For Months
Deliverable Requested: I, II, III, IV, Other (specify)						Spe	ecial Instructions/QC Requirer	ments:		
Empty Kit Relinquished by:-		Date:			111	ne		Method of Shipment:		
Relinquishear by	6-20-19 /	1555		Vohis (וניסטו	0	retriperator	Date/Time:	8/15	55 Company Usbis Gierop
Relinquished to Kifnsentor	G 21 201	909:1	00am	NOD IS			Latic Lopes		2019	(C9:002 in Company is Group
Fieling John John John John John John John John	6 31 /20						Kala nay	Date/Time:	101	9:20 5 SOMPANIADES
ALMO C	6015			, ,,,,,			Codier Temperature(s) °C and Othe	r Remarks.	1 1	رابار مرابا
- 126/19 140		17-6	coler	61	26.	10	1400 > 20		11	
AL/26/19 140	2 5L,pp	, 1	J. C.	0/,	5	1-7	1413	received:	M	ETA-JAC b/227/14016935

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

Chain of Custody Record 4917 8544 6463



THE LEADER IN ENVIRONMENTAL TESTING

lient Information	240	MINIO	NIST	(C) Joh	PM:	Orlette S			Carrier Tracking No(s)		COC No:	
ient Contact erek Bennett	Sampler Step	271-	7176	E-M	lail:		americainc.con	,		Page:		
ompany.	1600.	VII	11/2) loui	ene jon	nsonwest				Job#,		
ew Hampshire Dept of Environmental Services	In a not necessary	esi:			1	1	Analys	is Requested				
ddress. 9 Hazen Drive	Due Date Request	ea:			1118	0				A - HCL	The state of the s	
ty	TAT Requested (d	ays):			711	8			1111	B - NaOH	M - Hexane N - None	
oncord ale, Zip:	Standard TAT	Standard TAT						14 4 4 0	1111	C - Zn Acetate D - Nitric Acid	0 - AsNaO2 P - Na2O4S	
H, 03302	0.5105.000.3784							3 4 1 9		E - NaHSO4 F - MeOH	O - Na2SO3 R - Na2S2O3	
none: (03) 271-8520	PO#: Purchase Order	not require	d		_	a St (20 An		1111	1111	G - Amchior	S - H2SO4	
nai:	WO#	not require			- 2	a de		1111		H - Ascorbic Acid	T - TSP Dodecahydrate U - Acetone	
erek bennett@des.nh.gov	Pay using 3904				es or	Standard List (20 Analytes)				J - DI Water K - EDTA	V - MCAA W - pH 4-5	
oject Name. tratham FD	Project #: Stratham FD				Sample (Yes	S, St			storie	L-EDA	Z - other (specify)	
le:	SSOW#;				Tal &	- (MOD) PFAS,						
tratham, NH				Trader as a	4 SE	(go		1111	1 3			
	Secreta Bata	Sample	Sample Type (C≃comp,	Matrix (w=water, S=solid, C=waste/oil,	Field Filtered Sample (Yes	PFC_IDA - (M			Total Mumber of			
ample Identification	Sample Date	Time		ation Code:	<u> </u>	-				Special II	nstructions/Note:	
MTBE-9330	6/21/19	11/11	G	w	NN	ı x			6		None D'A	
		11 /11	11.10.00	1 - 3 - 3	11				1 0	1500	llege Rd	
MTBE-9331	6/21/19	11.33	G	W	1	UX.			0	11000	nnicuttre	
								TIPE MALE				
					11							
					++					-		
		3 - 4										
								Philipping to				
					++	+				-		
					++							
ossible Hazard Identification					S	ample Disp	oosal (A fee m	ay be assessed if	samples are retail	ned longer than	1 month)	
X Non-Hazard Flammable Skin Irritant	□son B (□h	own F	Ra⊡ogical	1	. 12	□Return	To Client	X Disposal B		chive For	Months	
eliverable Requested: I, II, III, IV, Other (specify)					Sp	pecial Instru	uctions/QC Rec	juirements:				
mpty Kit Relinquished by:		Date:			Time	:		Method	of Shipment:			
elinguished by:	Date/Time:	15	10	ASMDX	70	Received b	Stora	2 2 200	Date/Lime:	15.18	Company C	
elinquished by	Date/Time:	13	18	Company		Received b	1 2101C	ge 0.300	6/21/19 Date/Time:	12/18	Company DES	
IDRA	6/26/19	140	2	WHD	3	1 51	1000 /	oole	1.120/19	1402	Company 3 0c	
elinemented by	Date/Time:	1		Company		Received b	A.		6/27/19	935	Company	
Custody Seals Intact: Custody Seal No.: On/	015			I be a			nperature(s) °C and	Other Remarks:		152	ETA-SAC	
Custody Seal No. 206	0/5								166		Var. 09/04/2014	

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

Chain of Custody Record 4917 8344 6463



Client Information	Sampler, Stcpl	Sinn	Nistico	Joh	PM Inson, C	Orlette S		Carrier Tracking No(s)		COC No.		
Client Contact Derek Bennett	Phone	71-7		E-141		son@testame	ericainc com			Page.		
Company.	6000		170	One	1	BUTTE TO STATE	31 77 33 3	Control of the Contro		Job#		
New Hampshire Dept of Environmental Services	Due Date Request	ad)			1	111	Analysis F	Requested		Preservation Codes:		
Address 29 Hazen Drive	Due Date Request	eu.					1 1 1 1			A - HCL M - Hexane		
City	TAT Requested (d	ıys):			1118	· ·	1 1 1 1			B - NaOH N - None		
Concord State, Zip	Standard TAT				1118	20 Analytes)	1 1 1 1			C - Zn Azetale		
NH, 03302	100000000000000000000000000000000000000					J (20 Am				E - NaHSO4		
Phone (603) 271-8520	Po#. Purchase Order	not require	d			List S	11111			G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate		
Email:	WO#.	WO #:								I - Ice U - Acetone		
derek bennett@des.nh.gov Project Name	Pay using 3904				es or	Standard	4 4 4 4		Total Number of containers	J - DI Water V - MCAA K - EDTA W - pH 4-5		
Bodwell Septage	Seneral PWSI	Book	211 80%	00.	E (Y	s si	1 1 1 1		ntair	L - EDA Z - other (specify)		
Site	SSOW#		1 0		Sample (Y	PFA	1 1 1 1		l co	Other:		
Kensington, NH		-		102	S PO	- (MOD) PFAS			0.79			
			Sample I Type ((C=comp, o G=grab) or-	Matrix	Field Filtered Sample (Ye.	8	1111		E de	N 3		
		Sample	(C=comp, o	S=adiid,	Id F	C_IDA	1000		E			
Sample Identification	Sample Date	Time	G=grab) er-	ineue, AnAir	1 2 8	PFC.				Special Instructions/Note:		
E-04 6000		\sim	Preservation	Code:	XX				X	110.3		
MTBE_ 9332	6/2/19	13:45	G	W	NN	X			2	146 Deinkwater R		
1	1											
			100		#							
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									Mil			
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	-			_	++			+++++	-			
			4-4			Market Market						
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					11				100			
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Possible Hazard Identification	Ison B (In		- Terrent			mple Dispos □Return To	- The contract of the second	e assessed if samples are				
Non-Hazard	son B	DIVIN I	Ra ogical		_		ons/QC Requirer	Disposal By Lab		hive For Months		
Empty Kit Relinquished by:	10.00	Date:			Time:			Method of Shipment				
Relinguished by:	Date/Time	15:1	8 0	UHD	29	Received by	Storac	10 03 6/21	9	15:18 WHOES		
Retinquistredub	Dafe/Time		Con	pany	-1	Received by		Date/Time:		Company		
Relinfulshed by:	6/20/14 Date/Time:	1 19	02 1	1HD	F5	Received by	2019 (0	041 6/36/ Dath/Time	19	IMC/2 J.Sc		
	Dater (line)		Soli	Assert		0	24	Date/Time*	119	935 ETA-SAC		
Custody Seals Intact: Custody Seal No.: 8	06015	-				Cooler Tempera	ature(s) °C and Othe	V. E. N. Toronton	6			
Δ/Yes Δ No	0015							- 1	U			

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

Chain of Custody Record 4917 8544 6463



Client Information	Sampler	Heard			PM: inson,	PM: nson, Orlette S				Carrier Tracking No(s):		COC No.:	
Client Contact Derek Bennett	Phone:	271-85	38	E-M		nso	n@tes	tamericainc.com				Page:	
Company	1 4-5			19/15	T	.,,,,,,			s Requester			Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Request	ed:			1	H	1	Allalysis	Nequester	TI		Preservation Codes:	
29 Hazen Drive City: Concord State, Zip: NH, 03302	TAT Requested (d	TAT Requested (days): Standard TAT PO#: Purchase Order not required					/tes)					A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitro Acid P - Na2O4S E - NaHSO4 Q - Na2SO3	
Phone: (603) 271-8520						Continue Onles and sequiled					Group 8 (22 Analytes)		
Email: derek.bennett@des.nh.gov	WO#: Pay using 3904	WO#:					75 8 (22	1 1 1 1	111		2	I - Ice U - Acetone	
Project Name: DWGTF	Project# DWGTF	DWGTF					S, Gro			containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)		
Site! Hinsdale, NH	SSOW#						D) PFAS,	1 1 1 1	4 1 1	111	jo j		
Sample Identification	Sample Date	Sample Time	Sample Type (C≃comp, G=grab)	Matrix (Wawater, S=solid, O=wasteloil, BT=Tissue, A=Ais	Field Filtered	Perform mo/mou (res or no)	PFC_IDA - (MOD)				Total Number	Special Instructions/Note: (Address and Group No.)	
	\rightarrow	><	Preserva	tion Code:	\bowtie	<							
MTBE_8GI3	G-24-19	10:22	G	W	N	N	×				2	63 Oxbow Rd	
					H	1							
							1						
					+	1	+	+++	+++		+		
Possible Hazard Identification					5	Sam	ple Dis	sposal (A fee ma	y be assesse	if samples a	re retain	ned longer than 1 month)	
■ Non-Hazard □ Flammable □ kin Irritant □ Deliverable Requested: I, II, III, IV, Other (specify)	□lison B l□	nawn	Rublogica	el				n To Client ructions/QC Requ	Disposal	By Lab	□hc	hive For Months	
Empty Kit Relinquished by:		Date:			Time	e:			Met	hod of Shipment			
Relinquished by: ## B#	Date/Time: 6 · Z	C. Carlotte and C. Carlotte an	4:41	Company		IR	Received IHDES C	by: old Storage	Temp: 4.3	C Date/Tim	24 . 19	9 14:41 Company NHDES	
Relinquished by:	Date/Time:		402	Company NHDES		R	Received	200		O Date/Time		Company	
Relinquished by:	Date/Tinle:			Company		R	Received	MA SA	to		27/19		
Custody Seals Intact: Custody Seal No.: 8-06-01	5					C	Coaler Te	mperature(s) "C and (Other Remarks:	1-6	-	1511151	

880 Riverside Parkway West Sacramento, CA 95605 Chain of Custody Record 4917 8544 6463 TestAmerica

Phone (916) 737-5600 Fax (916) 372-1059									THE LEADER IN ENVIRONMENTAL TESTING
Client Information	Sampler B. A	Cizz A			b PM: ohnson,	Orlette S		Carrier Tracking No(s):	COC No.
Client Contact: Derek Bennett	B. F. 603-4	99-1	007	1.00	Mail: lette ion	nson@testame	ricaine com		Page:
Company:	000	11 20	001		T. C.	noun S toutaine			Job #:
New Hampshire Dept of Environ Services	Due Date Request	lodi			-		Analysis F	requested	Description Codes
Address: 29 Hazen Drive	Due Date Request	ieu:				19/10/1			Preservation Codes: A - HCL M - Hexane
City: Concord	TAT Requested (d	lays):				S S			B - NaOH N - None C - Zn Acetate Q - AsNaO2
State, Zip:	Standard TAT					alyte			D - Nitric Acid P - Na2O45
NH, 03302 Phone:	PO #				- 11	E S			E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
(603) 271-8520	Purchase Orde	r not require	d		6	List (Analytes)			G - Amehlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email	WO #: Pay using 3904				2 2	land I			I - Ice U - Acetone J - DI Water V - MCAA
Project Name: TrustFund_Londonderry_DWGTF_Lownloaderry_Site:	Project #:				Yes	Standard			0 0 0 0 0 0 0 0 0 0
TrustFund Londonderry DWGTF- Gurkonderry	SSOW#:					PFAS, 8			Other
Londonderry, NH	55UVW.				Sam	9 PF			jo .
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wowater, Besolid, Davisste/oil BT-Titsus, Au-	Field Filte	PFC_IDA - (MOD)			Special Instructions/Note:
					W				f 7 7 1 1 1 1 1 1 1
NOB-074	6-26-19	0820	G	DW	N	X			2 25 Coteville Rd.
Possible Hazard Identification → Non-Hazard	on B Unkn	own □ _f	Radiological				al (A fee may b	e assessed if samples are ret. Disposal By Lab	ained longer than 1 month) archive For Months
		Ineter					- 27	Method of Shipment:	
Empty Kit Relinquished by	Date/Time: /	Date:		Company	Time	Received by	111	The second secon	S. S. LOUGY Gompany
Theelred Parsa	6/26/1	9 13	33	LUBL		AC/	el el	Jul Slant (1/26/19	15:53 NHDFS
Rollinguished by:	Date/Time:	/10 P	402	Company	F/	Preceived by	1	Toole GOU/	19 1402 Company 2.3°C
Relinquished by:	G/SC/	17 1	700	Company	1	Received by:	pory (Day/Time /	Cumpany Con
						10	>	6/27/	19 935 ETA-SAC
Custody Seal No.:	806015					Cooler Tempera	ture(s) "C and Othe	r Remarks:	

Page 20 of 21











Ver. 08/04/2016

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51801-6 SDG Number: 25 Coteville Rd - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 51801 List Number: 1

Creator: Oropeza, Salvador

Creator. Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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, #95160.0	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:



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 Certification #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

SM 4500 NO2B

NH

Nitrate

Nitrite-N

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	1.2	1	mg/L	06/26/2019 15:55	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

mg/L

06/26/2019 16:50

0.01

< 0.01

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

Date Rec'd: Under Time Rec'd: 8. AQUARIAN ANALYTICAL LAB
Rec'd by Obo Location: FC
Cooler N Ice: N
Chlorine: Pos Neg
Bottle: TC MIN 40ML HCL LC OTHER 153 West Road Canterbury, NH 03224 Phone: (603)783-9097 RP190703014 E-mail: frontdesk@aquarianlabs.com Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project #: 95/60,00 Project Manager: Mark Henderson Please inquire about Same Day Turnaround Project Name: Condon Sayy W. Eval.
Town/Site: Condonservy, NH Report To: Mark Henderson
Invoice To: Account Physics
Phone: 603-114-4181
E-mail: Menderson e nobis-group.com rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround Sampler: R. Rizz 4 effort, we will not charge Three Day Turnaround Company: Nobis Evous a rush fee. Please call ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics # of Containers MADEP VPH Collection Sample ID Date/Time Aguarian ID NOB - 074 6-26-19/0820 DW Date/Timer Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 940 ISO 17025 accreditation required? ____Yes____No Relinquished by: Date/Time: Received by: EDD required? ____Yes____No Laboratory Supplied Containers? Yes No. MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (2/Ye) / No Relinquished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice?: 60/ No Receipt Temperature: 816 C Does a price quote apply?____Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

Lab ID: 19070003

Date Received: 6/27/2019

(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

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





03302-0

317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

Derek S. Bennett

Concord

Control #:

19070003

Lab ID: Date: 19070003 7/17/2019

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Project Name:

MTBE_01

Project Location: Londonderry, NH

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"



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

Date:

7/17/2019

NHDES MtBE Remediation Bureau

 Control #:
 19070003
 Lab ID:
 19070003

Derek S. Bennett

Project Number: DWGTF Londonderry

29 Hazen Drive, PO Box 95 Concord NH 03302-0

Project Name: MTBE_01

Project Location: 25 Coteville Rd Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	trix
19070003-001	NOB_074				6/26/20	19 8:20:00 AM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,1,1-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	200		7/2/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		7/2/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		7/2/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2-Dibromo-3-0	Chloropropane	EPA 524.2	< 2 ug/L			7/2/2019	2	LauraB
1,2-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		7/2/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,3-Dichloroben	nzene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
1,4-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	75		7/2/2019	0.5	LauraB
2,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
2-Chlorotoluene	9	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
2-Ethoxy-2-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		7/2/2019	0.5	LauraB
2-Methyl-2-Prop	oanol (TBA)	EPA 524.2	< 12 ug/L			7/2/2019	12	LauraB
4-Chlorotoluene	9	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
4-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Bromodichloron	nethane	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 Disulfid	e	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Carbon Tetrach	loride	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
			3			,	1 6	2

Page 1 of 3



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

Sample	Client Sample Ide	entity			Start Date/T	ime Sampled:	Ma	atrix
19070003-001	NOB_074				6/26/20	19 8:20:00 AM	Drinki RDL 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.	ng 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-Dichlore	oethene	EPA 524.2	< 0.5 ug/L	70		7/2/2019	0.5	LauraB
Cis-1,3-Dichlore	opropene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Dibromomethai	ne	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Dichlorodifluoro	methane	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
Hexachlorobuta	adiene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Methyl ethyl ke	tone (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 Chlo	oride	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	Э	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
N-Propylbenzei	ne	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			7/2/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		7/2/2019	0.5	LauraB
Tetrahydrofurar	n	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-Dichl	loroethene	EPA 524.2	< 0.5 ug/L	100		7/2/2019	0.5	LauraB
Trans-1,3-Dichl		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
Trichlorofluoror	nethane	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
,		-						



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.



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

LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.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.

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Laboratory Job ID: 320-50812-1 SDG: 21 Tokanel Dr - Londonderry, NH

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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

	\sim	N A	
_	u	IVI	0

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
1	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

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

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 1.6° 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

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

Client Sample ID: MTBE_1122

Lab S	Sample	ID: 320	-50812-1
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.1		1.9	0.33	ng/L		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	JI	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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

Client Sample ID: MTBE_1122

Lab Sample ID: 320-50812-1 Date Collected: 05/21/19 09:10 **Matrix: Water**

Date Received: 05/31/19 09:20

Analyte		Qualifier	RL		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		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	JI	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	В	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		ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorooctanesulfonic acid (PFOS)	7.5	I	1.9		ng/L		06/04/19 06:31	06/05/19 03:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/04/19 06:31	06/05/19 03:28	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			06/05/19 03:28	1
6:2 FTS	ND		9.5		ng/L		06/04/19 06:31	06/05/19 03:28	1
8:2 FTS	ND		1.9		ng/L		06/04/19 06:31		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	7
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	
13C2 PFHxDA	53		50 - 150				06/04/19 06:31	06/05/19 03:28	1
1802 PFHxS	86		50 - 150				06/04/19 06:31	06/05/19 03:28	
13C4 PFOS	84		50 - 150				06/04/19 06:31	06/05/19 03:28	
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	
1012 0.21 10									

6/12/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	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)					
320-50812-1	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					
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)						
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS					
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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					
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)						
		M282FTS												
Lab Sample ID	Client Sample ID	(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												

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

Eurofins TestAmerica, Sacramento

6/12/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

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

Lab Sample ID: MB 320-298920/1-A **Client Sample ID: Method Blank** Matrix: Water **Prep Type: Total/NA**

Analysis Batch: 299166								Prep Batch:	298920
		MB							
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0		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-methylperfluorooctanesulfonamidoa cetic 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
		MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	90		50 - 150				06/04/19 06:31		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

	MB	MB				
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/NA	
Analysis Batch: 299166							Prep Batch: 298920)
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130	_

Client Sample ID: Lab Control Sample

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Eurofins TestAmerica, Sacramento

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-298920/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 299166

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 298920

Analysis Batch. 200100	Spike	LCS LCS	:		%Rec.
Analyte	Added	Result Qua		D %Rec	Limits
Perfluoropentanoic acid (PFPeA)	40.0	40.4	ng/L		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	40.0	37.0	ng/L	92	72 - 132
(PFTriA)	40.0	00.4		00	00 400
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-methylperfluorooctanesulfona midoacetic 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	40.0	39.0	ng/L	97	72 - 132

·	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

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

Lab Sample ID: LCSD 320-298920/3-A					Client Sample ID: Lab Control Sample Dup						
Matrix: Water							Prep Type: Total/NA				
Analysis Batch: 299166							Prep Ba	atch: 29	98920		
-	Spike	LCSD	LCSD				%Rec.		RPD		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	38.5		ng/L		96	60 - 120	10	30		
(PFUnA)											
Perfluorododecanoic acid	40.0	38.1		ng/L		95	71 - 131	2	30		
(PFDoA)											
Perfluorotridecanoic acid	40.0	35.9		ng/L		90	72 - 132	3	30		
(PFTriA) Perfluorotetradecanoic acid	40.0	34.9		ng/L		87	68 - 128	4	30		
(PFTeA)	40.0	34.3		IIg/L		01	00 - 120	4	30		
Perfluorobutanesulfonic acid	35.4	36.8		ng/L		104	73 - 133	3	30		
(PFBS)				J							
Perfluorohexanesulfonic acid	36.4	33.0		ng/L		91	63 - 123	8	30		
(PFHxS)											
Perfluoroheptanesulfonic Acid	38.1	39.7		ng/L		104	68 - 128	3	30		
(PFHpS)	27.4	20.2		/I		00	07 407	0	20		
Perfluorooctanesulfonic acid	37.1	36.3		ng/L		98	67 - 127	2	30		
(PFOS) Perfluorodecanesulfonic acid	38.6	36.1		ng/L		94	68 - 128	3	30		
i emidorodecamesumormo acid	00.0	00.1		.19, -		υ-τ	30 - 120	0	00		

40.0

37.9

38.3

40.0

41.8

39.5

38.8

38.8

ng/L

ng/L

ng/L

ng/L

104

104

101

97

67 - 127

66 - 126

67 - 127

72 - 132

(PFHxDA)	
	1000 100

(PFDS)

6:2 FTS

8:2 FTS

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

(FFRXDA)	LCSD	LCSD	
Isotope Dilution	%Recovery	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

30

30

30

30

5

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

LCMS

Prep Batch: 298920

L	ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
3	20-50812-1	MTBE_1122	Total/NA	Water	3535	
٨	/IB 320-298920/1-A	Method Blank	Total/NA	Water	3535	
L	.CS 320-298920/2-A	Lab Control Sample	Total/NA	Water	3535	
L	.CSD 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

Job ID: 320-50812-1 Project/Site: DWGTF_Londonderry SDG: 21 Tokanel Dr - Londonderry, NH

Client Sample ID: MTBE_1122

Lab Sample ID: 320-50812-1 Date Collected: 05/21/19 09:10 **Matrix: Water**

Date Received: 05/31/19 09:20

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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 Num	ber Expiration Date			
ANAB	DoD			L2468	01-20-21			
The following analyte the agency does not o	•	ort, but the laboratory	y is not certified by the	e governing authority.	This list may include analytes for which			
Analysis Method	Prep Method	Matrix	Analyt	e				
EPA 537(Mod)	3535	Water	6:2 FT	S				
EPA 537(Mod)	3535	Water	8:2 FT	S				
EPA 537(Mod)	EPA 537(Mod) 3535 Water			hylperfluorooctanesulf NMeFOSAA)	onamidoacetic			
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	I (PFBS)			
EPA 537(Mod)	3535	Water	Perflu	Perfluorobutanoic acid (PFBA)				
EPA 537(Mod)	3535	Water	Perfluorodecanesulfonic acid (PFDS)					
EPA 537(Mod)	3535	Water	Perfluc	Perfluorodecanoic acid (PFDA)				
EPA 537(Mod)	3535	Water	Perflu	Perfluorododecanoic acid (PFDoA)				
EPA 537(Mod)	3535	Water	Perflu	Perfluoroheptanesulfonic Acid (PFHpS)				
EPA 537(Mod)	3535	Water	Perfluc	Perfluoroheptanoic acid (PFHpA)				
EPA 537(Mod)	3535	Water	Perfluc	Perfluorohexanesulfonic acid (PFHxS)				
EPA 537(Mod)	3535	Water	Perflu	Perfluorohexanoic acid (PFHxA)				
EPA 537(Mod)	3535	Water	Perfluoro-n-hexadecanoic acid (PFHxDA)					
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN	NA)			
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid	I (PFOS)			
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFO	A)			
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PF	PeA)			
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid	(PFTeA)			
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)					
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (P	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

Eurofins TestAmerica, Sacramento

Page 13 of 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
 Asset ID

3

4

5

7

0

10

4.6

13

15

116

880 Riverside Parkway West Sacramento, CA 95605

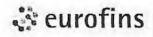
Page 16 of 19

Chain of Custody Record

T	
LOCTA	merica
10012	

THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Las / E.	15 300			nson, C	Orlette S	5	Carner Tracking No(s)		COC No	
Client Contact: Derek Bennett	Phone: E-Mail				son@t∈	estamericainc.com			Page:		
Company: New Hampshire Dept of Environ Services						Analysis Re	nuested		Job #:		
Address: Due Date Reque			ested:			П	littini minimi manana	questeu	1	Preservation Codes:	
29 Hazen Drive	TAT Decision of the				41					A - HCL M - Hexane	
City; Concord	TAT Requested (d	ays).				(sa)				B - NaOH N - None C - Zn Acetate O - AsNaO2	
State, Zip: NH, 03302	Standard TAT					inaly				D - Nitric Acid P - Na2O4S E - NaHSO4 O - Na2SO3	
Phone	PO#:				11	(2.0)	320-50812 Chain of C	ustody		F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4	
(603) 271-8520	not require	d		NO NO	List	1 1 1 1 1			H - Ascorbic Acid T - TSP Dodecahy		
Email: WO #: derek.bennett@des.nh.gov Pay using 390					No.	ndare			2	J - DI Water V - MCAA	
Project Name: TrustFund Londonderry DWGTF Londonderry	Project #:				S or	, Star			taine	K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
Site:	SSOW#.				- Je P	PFAS			con	Other:	
Londonderry, NH					ered Sam	- (MOD) PFAS, Standard List (2'DAnalytes)			erof		
			Sample Type	Matrix (Wasweller)	iltere n MS				Number		
		Sample	(C=Comp,	Sesolid, Desireste/pil,	Field Fill	PFC IDA			Total N	and the second second second	
Sample Identification	Sample Date	Time	G=grab) BT=Tipsue, A=Air) Preservation Code:		Page 1	12			L ^e	Special Instructions/Not	
MTBE-1122	5/21/19	0910	6	Dw	W	×			1	21 Tokanel Dr.	
	5/21/19	0945	6	DW	W	x			10	12 Mont Vernon Dr	
NOB- 051	5/21/19				6	x			+		
NOB-052		1040	6	5W	1	-			-	Sw-1	
NOB-053	5/21/19	1100	G	SW	14	x				Sia-2	
NOB-054	5/21/19	1115	6	Su	U	X				5w-3	
NOB-055	5/21/19	1150	b	SW	W	ю				Sw-4	
NOB-056	5/21/19	1240	6	Su	M	×				5W-5	
NOB-057	5/21/19	1320	6	SW	W	×				Sw-9	
Field Dank	5/21/19	1325	6	اساد	V	×				Lab supplied Alank	
									100		
Possible Hazard Identification	Possible Harard Identification							assessed if samples are re	etaine	ed longer than 1 month)	
Non-Hazard Flammable Skin Irritant Poise	on B Unkn	own \square_{F}	Radiological		I	Ret	um To Client	Disposal By Lab	Archi	ve For Months	
reliverable Requested: I, II, III, IV, Other (specify)					Sp	ecial In	structions/QC Requireme	nts:			
Empty Kit Relinquished by:	Date:				Time:		00.1	Method of Shipment:			
Relinquished by:	5/12//4	700 N			Receive	WHDES COLD Start 124 Date/Time: 5/22/19 14			14:42 Company NHDES		
Relinquisited by:	Date/Time:			Company DES		Receive	ed by	33°C) Date/Time / 5/30/19		14:15 Company DES	
Relinquished by:	5/30/19 14:15 Date/Time:			Company		Receive		Date/Jime 5/3//	19	920 ETA-S	
Custody Seals Intact: Custody Seal No.: 7410	08					Cooler	Temperature(s) °C and Other R		, ,	100 014-31	
containers labeled as "NOB_54" i	, ,	7.	_	-	_			1.0		Ver: 08/04/2016	



Environment Testing TestAmerica



ramento ig Notes

otes:	Therm. ID: AK3 Corr. Factor:		
	Ice Wet Gel Oth	ier	
	Cooler Custody Seal: 941608		
	Sample Custody Seal:		
	Cooler ID:		
	Temp Observed: 1.6°C Corrected:	1.6	C
	From: Temp Blank D Sample D		
	NCM Filed: Yes □ No □		
	Ye	s No	NA
	Perchlorate has headspace?		D/
	Alkalinity has no headspace?	1000	· 6
	CoC is complete w/o discrepancies?		Ď
	Samples received within holding time?		_
	Sample preservatives verified?		
	Cooler compromised/tampered with?	Ø	
	Samples compromised/tampered with?	Ø	D
	Samples w/o discrepancies?	0	D
	Sample containers have legible labels?	0	D
	Containers are not broken or leaking?	0	0
	Sample date/times are provided.	0	
	Appropriate containers are used?	0	
	Sample bottles are completely filled?	_	D
	Zero headspace?*		D
	Multiphasic samples are not present?	0	
	Sample temp OK?	0	0
	Sample out of temp?	D	D

Job:



Syps: 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 28 HAZEN DR

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

CONCORD, NH 033016503 UNITED STATES US

SAMPLE RECEIVING TESTAMERICA WEST SACRAMENTO 880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605

(916) 373 - 5600 REF: \$480 - 129630

RMA: || || || ||



FedEx TRK# 4917 8544 6485 FRI - 31 MAY 10:30A PRIORITY OVER 1GHT

XH BLUA



TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

741608

#2635495 05/30 565J1/D66C/23AD

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-1

SDG Number: 21 Tokanel Dr - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator. Oropeza, Sarvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	741608
The cooler or samples do not appear to have been compromised or ampered 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	
s 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 66mm (1/4").	True	
f 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	



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported:

06-Jun-19 08:17

REPORT OF ANALYSIS 119052561.01

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Drinking Water, MTBE_1122

sampled Date: 21-May-2019 09:10

Nitrate

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
BISA.SA.						
Nitrite						
<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

A Division of Noteby Analytical LLC

A Division of Nelson Analytical, LLC

Turnaround Requirements	(check one	<u>,,</u>					-				+											-									
				<u> </u>	Project Information																										
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	If we are your rush One Day Turnaround Pasonable Two Day Turnaround One Charge			Project #: 95/60. Project Name: London design of the second secon					7/54				Project Manager: Mark Henderson Report To: Mark Henderson Invoice To: Henderson Phone: 603-124-4182 E-mail: MHenderson Crobbs group.com					<u> </u>													
Sample Informa	ition	_=		VOCs SVOCs				Petroleum M				Ме	Metals Wet Chemistry / Inorganics																		
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Paramater only:		1.1-Luxatile / EUB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	MADEP VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1																							_T	ĺ		
telinquished by: telinquished by:	Date/Time: 5/21/19 Date/Time: Date/Time:	15-4	5	Receiv	ceived by:				Receipt Conditions (laboratory use only): Laboratory Supplied Containers (Yes / No Containers Intact/Properly Labeled? Yes / No Were samples delivered on ice (Yes / No					ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo																	
										Receip	t Temp	erature	:	<u>آ_</u> د	-/				Does a price quote apply? Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916												



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





03302-0

317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050392

19050392

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry Date: 6/24/2019

Lab ID:

Concord NH

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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 E	Blank has hit for Toluene but sample	s all <dl.< td=""><td></td><td></td></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"



NHDES MtBE Remediation Bureau

Analytical Results Control #: 19050392 Lab ID:

Derek S. Bennett

19050392 Project Number: DWGTF Londonderry 6/25/2019 Date:

29 Hazen Drive, PO Box 95

Project Name: Concord NH 03302-0 MTBE_01

Project Location: 21 Tokanel Dr Londonderry NH

Sample Client Sample Identity	1			Start Date/T	ime Sampled:	Ма	trix
19050392-002 MTBE_1122				5/21/20	19 9:10:00 AM	Drinki	ng water
					Date/Time		
Parameter	Method	Result ^I	MCL	Qualifier	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 Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
19050392-002	MTBE_1122				5/21/20	19 9:10:00 AM	Drinki	ing 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-Dichlord	oethene	EPA 524.2	< 0.5 ug/L	70		6/3/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	adiene	EPA 524.2	< 1 ug/L			6/3/2019	1	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	Э	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
,		-						



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.



Environment Testing TestAmerica

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

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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.

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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.
В	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

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

7/16/2019

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Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

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 1.6° 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

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry 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 JB	1.8	0.16 ng/L	1 EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

Client Sample ID: MTBE 2800

8:2 FTS

Perfluoro-n-hexadecanoic acid

Lab Sample ID: 320-51801-1 Date Collected: 06/20/19 11:55 **Matrix: Water** Date Received: 06/27/19 09:35

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 RL Dil Fac **Analyte** Result Qualifier **MDL** Unit Prepared Analyzed Perfluorobutanoic acid (PFBA) $\overline{\mathsf{ND}}$ 1.8 0.32 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluoropentanoic acid (PFPeA) ND 1.8 07/03/19 05:43 07/04/19 16:53 0.45 ng/L Perfluorohexanoic acid (PFHxA) ND 1.8 0.53 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluoroheptanoic acid (PFHpA) ND 1.8 0.23 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluorooctanoic acid (PFOA) ND 0.78 ng/L 07/03/19 05:43 07/04/19 16:53 1.8 Perfluorononanoic acid (PFNA) ND 1.8 0.25 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluorodecanoic acid (PFDA) ND 1.8 0.28 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluoroundecanoic acid (PFUnA) ND 1.8 1.0 ng/L 07/03/19 05:43 07/04/19 16:53 ND Perfluorododecanoic acid (PFDoA) 1.8 0.50 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluorotridecanoic acid (PFTriA) ND 07/03/19 05:43 07/04/19 16:53 1.8 1.2 ng/L Perfluorotetradecanoic acid (PFTeA) ND 1.8 0.27 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluorobutanesulfonic acid (PFBS) ND 1.8 0.18 ng/L 07/03/19 05:43 07/04/19 16:53 0.16 ng/L 0.28 JB 07/03/19 05:43 07/04/19 16:53 Perfluorohexanesulfonic acid 1.8 (PFHxS) 07/03/19 05:43 07/04/19 16:53 ND 1.8 0.17 ng/L Perfluoroheptanesulfonic Acid (PFHpS) Perfluorooctanesulfonic acid (PFOS) ND 1.8 0.49 ng/L 07/03/19 05:43 07/04/19 16:53 Perfluorodecanesulfonic acid (PFDS) ND 0.29 ng/L 07/03/19 05:43 07/04/19 16:53 1.8 N-methylperfluorooctanesulfonamidoa ND 1.8 1.1 ng/L 07/03/19 05:43 07/04/19 16:53 cetic acid (NMeFOSAA) 6:2 FTS ND 9.1 1.8 ng/L 07/03/19 05:43 07/04/19 16:53

1.8

1.8

0.34 ng/L

0.81 ng/L

%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
82	50 - 150	07/03/19 05:43	07/04/19 16:53	1
90	50 - 150	07/03/19 05:43	07/04/19 16:53	1
85	50 - 150	07/03/19 05:43	07/04/19 16:53	1
94	50 - 150	07/03/19 05:43	07/04/19 16:53	1
93	50 - 150	07/03/19 05:43	07/04/19 16:53	1
98	50 - 150	07/03/19 05:43	07/04/19 16:53	1
96	50 - 150	07/03/19 05:43	07/04/19 16:53	1
92	50 - 150	07/03/19 05:43	07/04/19 16:53	1
90	50 - 150	07/03/19 05:43	07/04/19 16:53	1
85	50 - 150	07/03/19 05:43	07/04/19 16:53	1
84	50 - 150	07/03/19 05:43	07/04/19 16:53	1
56	50 - 150	07/03/19 05:43	07/04/19 16:53	1
93	50 - 150	07/03/19 05:43	07/04/19 16:53	1
86	50 - 150	07/03/19 05:43	07/04/19 16:53	1
92	50 - 150	07/03/19 05:43	07/04/19 16:53	1
108	50 - 150	07/03/19 05:43	07/04/19 16:53	1
91	50 - 150	07/03/19 05:43	07/04/19 16:53	1
	82 90 85 94 93 98 96 92 90 85 84 56 93 86 92 108	82 50 - 150 90 50 - 150 85 50 - 150 94 50 - 150 93 50 - 150 98 50 - 150 96 50 - 150 92 50 - 150 85 50 - 150 84 50 - 150 84 50 - 150 93 50 - 150 93 50 - 150 93 50 - 150 94 50 - 150 95 50 - 150 96 50 - 150 97 50 - 150 98 50 - 150 98 50 - 150 99 50 - 150	82 50 - 150 07/03/19 05:43 90 50 - 150 07/03/19 05:43 85 50 - 150 07/03/19 05:43 94 50 - 150 07/03/19 05:43 98 50 - 150 07/03/19 05:43 96 50 - 150 07/03/19 05:43 92 50 - 150 07/03/19 05:43 90 50 - 150 07/03/19 05:43 85 50 - 150 07/03/19 05:43 84 50 - 150 07/03/19 05:43 56 50 - 150 07/03/19 05:43 93 50 - 150 07/03/19 05:43 93 50 - 150 07/03/19 05:43 92 50 - 150 07/03/19 05:43 92 50 - 150 07/03/19 05:43 92 50 - 150 07/03/19 05:43 92 50 - 150 07/03/19 05:43 92 50 - 150 07/03/19 05:43 108 50 - 150 07/03/19 05:43	82 50 - 150 07/03/19 05:43 07/04/19 16:53 90 50 - 150 07/03/19 05:43 07/04/19 16:53 85 50 - 150 07/03/19 05:43 07/04/19 16:53 94 50 - 150 07/03/19 05:43 07/04/19 16:53 93 50 - 150 07/03/19 05:43 07/04/19 16:53 98 50 - 150 07/03/19 05:43 07/04/19 16:53 96 50 - 150 07/03/19 05:43 07/04/19 16:53 90 50 - 150 07/03/19 05:43 07/04/19 16:53 90 50 - 150 07/03/19 05:43 07/04/19 16:53 85 50 - 150 07/03/19 05:43 07/04/19 16:53 84 50 - 150 07/03/19 05:43 07/04/19 16:53 93 50 - 150 07/03/19 05:43 07/04/19 16:53 93 50 - 150 07/03/19 05:43 07/04/19 16:53 93 50 - 150 07/03/19 05:43 07/04/19 16:53 92 50 - 150 07/03/19 05:43 07/04/19 16:53 92 50 - 150 07/03/19 05:43 07/04/19 16:53 92 50 - 150 07/03/19 05:43 07/04/1

ND

ND

Job ID: 320-51801-1

07/03/19 05:43 07/04/19 16:53

07/03/19 05:43 07/04/19 16:53

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

				ent Isotope		• `	•	•	
		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)
320-51801-1	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Eurofins TestAmerica, Sacramento

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QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

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

Lab Sample ID: MB 320-305366/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 305690	Prep Batch: 305366
7 maryole Datem cocco	. Top Latom cocco

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

i cilidoro-il-licxadecallole acid				0.00g	01700710 00110	0.70.7.0.20	•
(PFHxDA)							
		MB					
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/NA Prep Batch: 305366
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	42.8		ng/L		107	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 23 7/16/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-305366/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 305690

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

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

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

Prep Batch: 305366

Analysis Batem 000000	Spike	LCS L	cs		%Rec.
Analyte	Added	Result Q	ualifier Unit	D %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-methylperfluorooctanesulfona midoacetic 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	40.0	41.0	ng/L	103	72 - 132

Isotope Dilution	%Recovery	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

LCS LCS

700277 011171	• • • • • • • • • • • • • • • • • • • •	00 - 700
13C2 PFDoA	88	50 - 150
13C2 PFTeDA	77	50 - 150
13C3 PFBS	89	50 - 150
13C2 PFHxDA	31 *	50 - 150
1802 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

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-305366/3-A

Matrix: Water

(PFHxDA)

M2-8:2 FTS

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

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

Client Sample ID: Lab	Control Sam	ple Dup
	Prep Type: T	otal/NA
	Prep Batch:	305366
	% Boo	DDD

Matrix. Water							i ich i	•	
Analysis Batch: 305690							Prep Ba	atch: 30	
	Spike	_	LCSD				%Rec.		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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	40.0	41.5		ng/L		104	72 - 132	1	30

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 PFHxS	90		50 - 150
13C4 PFOS	91		50 - 150
d3-NMeFOSAA	98		50 - 150
M2-6:2 FTS	103		50 - 150

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50 - 150

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

LCMS

Prep Batch: 305366

Lab Sa	ab Sample ID Client Sample ID		Prep Type	Matrix	Method	Prep Batch
320-51	801-1	MTBE_2800	Total/NA	Water	3535	
MB 320)-305366/1-A	Method Blank	Total/NA	Water	3535	
LCS 32	20-305366/2-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

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry SDG: 19 Teton Drive - Londonderry, NH

Client Sample ID: MTBE_2800

Lab Sample ID: 320-51801-1 Date Collected: 06/20/19 11:55 **Matrix: Water**

Date Received: 06/27/19 09:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

uthority	Program		EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
,	•	ort, but the laboratory	y is not certified by the	e governing authority. This	list may include analytes for which
the agency does not of Analysis Method	Prep Method	Matrix	Analyt	e.	
EPA 537(Mod)	3535	Water	6:2 FT		
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfonam IMeFOSAA)	nidoacetic
EPA 537(Mod)	3535	Water	•	probutanesulfonic acid (PF	3S)
EPA 537(Mod)	3535	Water	Perflu	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perflu	prodecanesulfonic acid (PF	DS)
EPA 537(Mod)	3535	Water	Perflu	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perflu	orododecanoic acid (PFDoA	A)
EPA 537(Mod)	3535	Water	Perflu	oroheptanesulfonic Acid (Pl	FHpS)
EPA 537(Mod)	3535	Water	Perflu	oroheptanoic acid (PFHpA)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFHxA)	
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (P	FHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PFC	OS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA)	
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFT	eA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perflu	oroundecanoic acid (PFUnA	A)

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

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Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51801-1 Project/Site: DWGTF_Londonderry 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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway West Sacramento, CA 95605

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7/16/2019

Chain of Custody Record 4917 8544 6463

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler R	Pin .	1		b PM: ohnson, Oriette S		Carrier Tracking	Carrier Tracking No(s):		COC No:	
Client Contact: Derek Bennett	Phone:	199-	5007		Mail:	hns	son@testamericainc.com				Page:
Company:	1003-7	// ×	007	- Juli	T T	711110		la acceptant			Job #
New Hampshire Dept of Environ Services Address:	Due Date Request	ed:			+		Analysis F	equested		Т	Preservation Codes:
29 Hazen Drive	TAT Requested (da	web			-10						A - HCL M - Hexane
City: Concord	TAT Requested (un	iya <i>j</i> .					(sa)				B - NaOH N - None C - Zn Acelate O - AsNaO2
State, Zip: NH, 03302	Standard TAT						List (Æfanalytes)				D - Nitric Acid P - Na2O4S E - NaHSO4 O - Na2SO3
Phone:	PO #:	met marilya	à.		11		10000000000000000000000000000000000000				F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4
(603) 271-8520 Email:	Purchase Order	noi require	0	-	-8		2 E				H - Ascerbic Acid T - TSP Dodecahydrate 1 - Ice U - Acetone
derek,bennett@des.nh.gov Project Name:	Pay using 3904 Project #:				es or	r No)	Standard			ers	J - DI Water V - MCAA K - EDTA W - pH 4-5
TrustFund Londondorry DWGTF Condonlevor					Je (Y	(Yes or	8, 8,			containers	L - EDA Z - other (specify)
Site: Londonderry, NH	SSOW#:				Sample (Yes	S) PFAS,			ot co	Other:
			Sample Type	Matrix (W=water,	ered	MS/M	тря - (мов)			Number	
Control of the Affication	Sample Date	Sample Time	(C=comp, G=grab)	Senolid, O=Wsete/oil,	ield	Perform	PFC II			Total	Special Instructions/Note:
Sample Identification	Sample Date	>	Preservat			Ż				Ż	Special instructions/Note:
M+BE- 1125	6-20-19	1155	6	DW	N		X			2	19 Tetan Drive
JULIANE E HOLE	20 //	1600			Ħ	T				-	77 10100 41100
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					\mathbb{H}				1 1 1		
					\perp			TE OFFICIAL WA			
							320-51801 Chain of Ci	stody			
					\top		320-51801 Chair or 5		1 1 1		
					H					Ħ	
Possible Hazard Identification	-			-	+	San	mple Disposal (A fee may b	e assessed if sa	amples are re	taine	ed longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois	on B Unkni	own \square_{f}	Radiological			С	Return To Client	Disposal By La	ab \square	Archi	ve For Months
Deliverable Requested: I, II, III, IV, Other (specify)						Spe	ecial Instructions/QC Requirer	nents:			
Empty Kit Relinquished by:-		Date:			Tin	1		Method of	Shipment:		
Relinquished by	6-20-19 /	1555		Vehis C	Summer 1		retriperator		Date/Time:	115	55 Company Usbis Group
Relinquisted by HEFIGERATOR	G[2] [20]	909:1	00am	Nobis			Latic Lopes				(69:002 m Company is Group
Fielinduls wert two - 1 X T A Y	Date/1001 /20						Lalr Day		Date/Time	CA	
Sattle Spale Interfer Country Spale No.		1107.	o-nani	Nobis	Jrv.		Codier Temperature(s) °C and Other	- Gumarke	Date/Time	1	9:20 5/8MPR/NHDES
	6015							(.6		
A1-126/19 140	2 51-pp	179 0	coler	6/	26/	19	1402 2,3 6	Received	1:00	4	ETA-JAC 6/27/19 935
111111111111111111111111111111111111111				5				0 9	00		D 0 4 6 N .

TestAmerica Sacramento

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

Chain of Custody Record 4917 8344 6463



THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler SHPP	minie	Nst	CO Joh	PM: Inson, C	Orlette S		Carrier Tracking No(s)		COC No:
Client Contact Derek Bennett	Phone CO3	271-	7176	E-M		son@testa	americainc.co	om		Page:
Company: New Hampshire Dept of Environmental Services	1 600	O II	1115		1			sis Requested		Job#,
Address.	Due Date Request	ed:	_		100		Allaly	rsis Requesteu		Preservation Codes:
29 Hazen Drive City:	TAT Requested (d	avs):			41100					A - HCL M - Hexane B - NaOH N - None
Concord		74.767				lytes				C - Zn Acetate O - AsNaO2
State, Zip: NH, 03302	Standard TAT					(20 Ana				D - Nitric Acid P - Na2O4S E - NaHSO4 D - Na2SO3 F - MeOH R - Na2S2O3
Phone: (603) 271-8520	PO#: Purchase Order	not require	d		7	St (2)				G-Amchior S-H2SO4
Email:	WO#				1 × ×	ard L				H - Ascorbic Acid T - TSP Dodecahydrate U - Acetone
derek_bennell@des.nh,gov Project Name:	Pay using 3904				Yes or or No)	Standard List (20 Analytes)			ners	J - DI Water V - MCAA K - EDTA W - pH 4-5
Stratham FD	Stratham FD	Stratham FD							containe	L - EDA Z - other (specify) Other:
Site: Stratham, NH	SSOW#				ered Sample (MS/MSD (Yes	D) PF	141		70	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp,	Matrix (Wewater, Secold, Cowasteroll, 91=Tissum, Analy	ald Filt	PFC_IDA - (MOD) PFAS,			Total Number	Special Instructions/Note:
Cample Identification	Sumple Bate	> <		ation Code:	X				X	Special ilistractions/Note.
MTBE-9330	6/21/19	WILL	G	W	NN	x			2	15 College Rd
MTBE-9331	6/21/19	11.32	G	W	11/1	X	her had had		10	17 Winnicuttra
120-1301	CIALITY			- 00					T	TI WHITECHING
					H	+				
	-				+					
					++-	+++				
					+				+	
					1					
Possible Hazard Identification			0.00					may be assessed if samples a	re retain	ed longer than 1 month)
Non-Hazard	Son B (Ch	own F	kalogical			Return	To Client actions/QC Re	X Disposal By Lab		thive For Months
					1		CHOTIS/QC IN			
Empty Kit Relinquished by:	IOnto/Figure	Date:	_	Сотолен	Time:			Method of Shipment	,	2 10
Relinquished by: GA A Res	Date/Time:	15	18	A M.DE	5	Dold	Store	age 0.3°C Bate/Time	1119	15,18 COMPANY NES
Relinquished by	Date/Time:	140		CoMpany	6	Received by	10019	Cole 1.DC	1	1402 230c
Relinearshed by	6/26/19 Date/Time:	1.0	-	Company		Received by	1	Date/Time	lia	935 Company SAC
Custody Seals Intact: Custody Seal No.:	1015					Cooler Tem		of Diller Direction		122 1614-246
Custody Seals Intact: Custody Seal No.: 80	6015				-			lob		Var. 09/04/2014

TestAmerica Sacramento

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

Chain of Custody Record 4917 8344 6463



Client Information	Shept Phone	Sinn	Nisti	CO Top	nson.	Orlette	s		Camer th	icking (40(s)		COCINA	
Client Contact Derek Bennett	Phone:	71-7	175			nson@	testamericain	c.com				Page.	
Company.	1 600 0		17.7	15.00	1			10.0.34	equested			Job#	
New Hampshire Dept of Environmental Services Address	Due Date Requeste	ed:		_	110			lalysis ix	equesteu		11	Preservation Cod	es:
29 Hazen Drive	TAT Requested (da	ays):		-	100	1			111			A - HCL B - NaOH	M - Hexane N - None
Concord	37. 100 3. 57 3					ytes)		11	11	1 1 1	1 1	C - Zn Asetate D - Nitris Asid	D - AsNaO2 P - NaZO4S
State, Zip NH, 03302	Standard TAT					(20 Analytes)	0					E - NaHSO4 F - MeOH	0 - Na2SO3 R - Na2S2O3
Phone (603) 271-8520	Po#. Purchase Order	not require	d			st (20	8					G - Amchlar H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate
Email:	WO #.				s or No	Standard List						I - Ice J - DI Water	U - Acetone V - MCAA
derek bennetf@des:nh.gov Project Name	Pay using 3904		/-		Yes	Stand	1 1 1	11.1		111	of containers	K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
Bodwell Septage Site	General PWSI SSOW#	Budie	ell sep	ace.	Sample (Yes or	AS, S	1 1 1		118		onta	Other:	E - admir (appearing)
Kensington, NH	SSUVVIII.				Sam	- (MOD) PFAS,					ofe	e a a a a a a a a a a a a a a a a a a a	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (wewster, Sendid, Gewaste/oil, GT-Tissue, A-Ai	Field Filtered Sample (Ye	PFC_IDA - (MO					Total Number	Special In:	structions/Note:
	><	><	Preserva	tion Code:									
MTBF_ 9332	6/2/19	13:45	G	W	NN	X					á	146 D	sinkwater R
			1										
					11				+=				
					++	+			+				
					++-	+		+	++	-	++		
					11	+	-HH		++		++		
					11				+				
Possible Hazard Identification	100		-								are retain	ed longer than 1	month)
Non-Hazard	on B Ch	own F	Ra ogical				eturn To Client Instructions/Q0		Disposal	By Lab		chive For	Months
							n jagraciiona/QC	- requien		1 100			
Empty Kit Relinquished by:	TOsta/Time	Date:		Company	Time		unid bu		100	od of Shipment			Company
Relinguished by	Date/Time Date/Time	15.1	8	Company	ES	10		toxac	10 O	5 6/2	1/19	15:18	UNDES
Retinquistred by	Date/Time	14	02	MHD MHD	FL	Rece	Shippi	· C	2	Date/Tim	6/19	1402	a.3°
Relinquished by	Date/Time:		2	Company	-	Rece	Wed by	H.	041	Date/Tim	7/19	935	Company
Custody Seals Intact Custody Seal No.:	1.010		-			Coole	er Temperature(s)	oc and Other	Remarks:	10/2		132	ETA-SAC
Δ/res Δ No 800	6015				_						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



Client Information	Sampler: Anna	Heard		Lab Joh	PM: nson, (Orlet	tte S			Carrier Tracking No	o(s):	COC No:		
Client Contact Derek Bennett	Phone:	271-85	38	E-M:		nsor	@testa	mericainc.com	,			Page:		
Company: New Hampshire Dept of Environ Services				1500		-			is Req	uested		Job#:		
Address:	Due Date Request	ed:			100	1	11	1				Preserva	tion Codes:	
29 Hazen Drive City: Concord State, Zip:	TAT Requested (d	ays):				150						A - HCL B - NaOH C - Zn Ace D - Nitric A E - NaHSO	Acid P - Na2O4S	2
NH, 03302 Phone:	PO#:	-			-811	Group 8 (22 Analytes)						F - MeOH G - Amohle	R - Na2S2O	
(603) 271-8520	Purchase Order	not require	ď		ΘŽ	A 22)	P					H - Ascorb		
Email: derek.bennett@des.nh.gov	Wo#: Pay using 3904				No.	B out	0	111			2	1 - 251 141-1		
Project Name: DWGTF	Project # DWGTF				ered Sample (Yes or MS/MSD (Yes or No)						containers	L-EDA Other:	Z - other (sp	ecify)
Hinsdale, NH	SSOW#				Samp ISD (Y	ad io				111	10			
Sample Identification	Sample Date	Sample Time	Sample Type (C≃comp, G=grab)	Matrix (Wawater, S=sold, C=wasteloil, BT=Titsue, A=Air	rform	PEC IDA - (MOD) PEAS					Total Number	Sp (A	ecial Instructions/	
	><	$>\!<$	Preserva	tion Code:	\bowtie									
MT8E_8613	G.24 - 19	10:22	G	W	NN	1 >	<				2	63	Oxbow Rd	
				†										
	The state of				П		11/20							
					T	T								
					Ħ	+								- 10
					Ħ	t	++							
					H	+	++	+++						-
				-	H	+	++	+	+				_	
Possible Hazard Identification					S	amn	ole Disp	osal (A fee m	nav be a	sessed if sam	ples are retai	ned lange	r than 1 month)	
A CANADA CONTRACTOR OF THE CON]ison B (□	hawn	Rublogica	2/				To Client		isposal By Lab		hive For_	Months	į.
Deliverable Requested: I, II, III, IV, Other (specify)					S	peci	al Instru	ctions/QC Rec	quiremen	ts:				
Empty Kit Relinquished by:		Date:			Time					Method of Sh	ipment:			
Relinquished by: ## By	Date/Time: 6 · Z	4.19 /	4:41	Company NHDES	97	RE	Ceived by	f Storage	Temp:	4.3°C	6-24-1	9 14:0	Company NHDES	
Relinquished by:	Date/Time:		-	Company NHDES		Re	ceived by	ping Cooler	Temp:		6/DU/I	(*2. * 17.2*)	Company NHDES	
Relinquistied by:	Date/Time:	1 1 1	100	Company			ceived by		at 1		ale 1927/19		35 Company	SAF
Custody Seals Intact: Custody Seal No.: \$0601	5					Co	ooler Temp	perature(s) "C and	d Other Rer		6		- JOH	ا ۱۳

880 Riverside Parkway West Sacramento, CA 95605 Phone (916) 737-5600 Fax (916) 372-1059 Chain of Custody Record 4917 8544 6463 TestAmerica

Ver. 08/04/2016

Client Information	Sampler B. A	Pizz A			PM: Inson,	Orlette	e S		Car	rier Tracking No(s)		COC No:
Glient Contact: Derek Bennett	Phone: 603-4	99-5	מחד	E-M		nson (@ testamer	cainc.com				Page
Company: New Hampshire Dept of Environ Services	1000				T	0.04.1000	3.50.03.00.00	Analysis	Regue	stod		Job #:
Address:	Due Date Request	ed:			+			Allalysis	neque	I I		Preservation Codes:
29 Hazen Drive City:	TAT Requested (d.	ays):			4 11		11					A - HCL M - Hexane B - NaOH N - None
Concord		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				ytes)						C - Zn Acetate
State, Zip: NH, 03302	Standard TAT					Anal	8					E - NaHSO4 Q - Na2SO3 F - MeOH H - Na2S2O3
Phone: (603) 271-8520	Po #. Purchase Order	not require	d		<u>@</u>	Standard List (E) Analytes)	8					G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email	WØ #:				Sample (Yes or No.	ardLi		1 1				I - Ice U - Acetone
derek bennett @des.nh.gov Project Name:	Project #:			_	Yes or	hand					iners	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Trustfund Londondony DWGTF - Garlanderry	SSOW#:) ald	AS. S					containers	Other:
Londonderry, NH	330 yy #.				ered Sample	0) PF					5	The second second
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wawater, Sesolid, Davisste/oil, BTaTissus, AnAi	Field Filtered	PFC_IDA - (MOD) PFAS,					Total Number	Special Instructions/Note:
	\sim	\sim		tion Code:	X	١.,			++		Ź	7 1 11 11 11
Possible Hazard Identification Non-Hazard □ Flammable □ Skin Irritant □ Pois	6-26-19 on B □ Unkn	0820	G. Radiological	DW	N		e Disposa Belum To	I (A fee ma,	y be asse	essed if sample		ned longer than 1 month)
Deliverable Requested: I, II, III, IV, Other (specify)	ON B BINN		iadiological		S	pecial	Instructio	ns/QC Requi	irements:	oon by Lin	1.000	me me me me me me me me me me me me me m
Empty Kit Relinquished by		Date:			Time	2:	m	11	7	Method of Shipm	ent:	
Relinquished by: Relinquished by:	Date/Time: Date/Time: Date/Time:	9 13	33	Company Company NHO Company	£4	Frec	eived by	24	Cold Cod	Slarge Cell Date	Time: 26/19 Time: 15/19 Time: 127/19	13:35 Company NHDFS 1 1402 Company 2.3°L 935 Company FTA-SAC
Custody Seals Intact: Custody Seal No.:	806015					Coo	ler Tempera	ture(s) "C and C	Other Remar	ks: 1-6	1-11	1 - 10 - 17

4

Page 20 of 23

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320-51801 Field Sheet

Job:	_	
77.77		

racking #			
racking #	•		

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: 12 Stem Corr. Factor:			
	ce Wet Gel	Othe	r	
	Cooler Custody Seal: 80601			
/				
	Sample Custody Seal:			
	Cooler ID:			
	Temp Observed: 1.6°C Corrected:		1.60	1.
	Temp Observed: Corrected:		1-0	_
	From: Temp Blank Sample	6		
		ם		
4101 / 0/22/10	Now Fied. 165 E	_		
MAN / 6/27/19		Yes	No	NA
	Perchlorate has headspace? (Methods 314, 331, 6850)	D	ם	D
	Alkalinity has no headspace?	П		6
	CoC is complete w/o discrepancies?	D		
	Samples received within holding time?	D		
	Sample preservatives verified?		D	D
	Cooler compromised/tampered with?	D	0	D
	Samples compromised/tampered with?		D	D
	Samples w/o discrepancies?	D	D	
	Sample containers have legible labels?	N	D	
	Containers are not broken or leaking?	6		
	Sample date/times are provided.	D		
	Appropriate containers are used?	D		
	Sample bottles are completely filled?	D		
/	Zero headspace?*		D	D
/	Multiphasic samples are not present?	D		
	Sample temp OK?			
	Sample out of temp?		D	
I	nitials: MAN Date: G	127	119	
/	Containers requiring zero headspace have no headspace, o	r bubble	< 6 mm	1 (1/4")

\land{\text{

15

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID:PHDA (603) 271-8483 SHARON LEWANDOWSKI NHDES MTBE REMEDIATION BUREAU 28 HAZEN DR

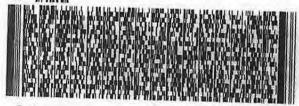
SHIP.DATE: 29APR19 ACTWGT: 10.00 LB MAN CAD: 0562065/CAFE3211

CONCORD, NH 033016503 UNITED STATES US

SAMPLE RECEIVING TESTAMERICA WEST SACRAMENTO 880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605 (916) 373 - 5600 REF: \$480 - 129630

RMA: || IIII ||



FedE

FedEx TRK# 4917 8544 6463

THU - 27 JUN 10:30A PRIORITY OVERNIGHT

XH BLUA

9560 CA-US SM



TestAmeric THE LEADER IN ENVIRONMENTAL TESTING 806015

TestAmerica

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 Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

True

Samples do not require splitting or compositing.



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 August 2019

18 Chenell Drive Concord NH, 03301:

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

NELSON ANALYTICAL LAB

RP190813206

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

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

Date Reported:

13-Aug-19 15:12

REPORT OF ANALYSIS

119062368.01

Londonderry WQ Eval., Londonderry, NH, #95160.00 MtBE_2800, 19 Teton Drive

sampled Date: 20-Jun-2019 11:55

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	06/21/2019 15:15	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	06/21/2019 17:10	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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 JAPOTO 23 West Road Phone: (603)783-9097

E-mail: frontdesk@aquarianlabs.com

<u> </u>				А	נע.	VIS	101	01	IN G	150	n .	Ana	Hyt	ica	1, 1	LC													
Turnaround Requirements										-					Pr	ojec	t Inf	orm	atio	חכ	_				-				
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	es Need Prior Approvine Day Turnaround ne Day Turnaround vo Day Turnaround ne Day Turnaround normal Turnaround	val		P To S Co d Ref	omp	any:		95 vv2 our K	lle De k De k B	0. Per 102 122	00 14 61	h	10 1	EV 14	ral .	——————————————————————————————————————		Pro	ect P Ir	Mar Repo Ivoid P	nage ort T ce T hon -ma	er: o:_ o:_ e:_ iii:_	10 10 10 10 10 10 10 10 10 10 10 10 10 1	1901 200 3- 4en	- E V 23 Sev	His Service Se	udi 40 410 0	ysou wsou wask es notis-f	Crown of
Sample Informat	tion		\	voc	s		s	voc	s	i		Ре	trole	eum			Мє	tals			Wet	Che	emis	try/	Inor	gan	ics	T	
Sample ID M+BE - 1125 19 Tetan Drive	Collection Date/Time Sample Watrix	_	VOCs EPA 8260B/8280C 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 80818 / 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	МАФЕР ЕРН	МАДЕР УРН	Petroleum Fingerprint Analysis	A CEAS metally (circle)		Sodium / Calcium / Magnesium Total / Dissolved	ved):	ite Fluoride		1			EPA 1864A HEM Oil and Grease	DS)/ TSS)	<u>a</u>	Aqua	rian ID
				-				_	_			-	-	 -		-		_	_	_	-	<u> </u>		-	\perp	$oxed{\Box}$			
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		4				_		1						_		_		ioler: Iorin Itle:	e:	os MIN_	N-40N	eg IL	HCL.	10	0	THER			
Habra Hadla V	Pate/Time: Of 1/2 S/P4 / 7/2 Vate/Time:	13		ved by			<u>'</u>			\dashv						orato		se on	ly):	ISO 1 EDD	7025 a require	ccred	itation i	require	:d? _No	Yes_	No	mplete):	
Relinquished by:	ate/Time;	F	Receiv	ved by	y:		· · · ·			٦,	Contai Were s	ners in	tact/Pro s delive	operly i ered or	Labele	Nes)	/ No			MCP Is this Does	Compli NH "C a price	iance i Idd Fu Guote	require ind" reli	d? ated?_ ?	Yes Ys	es	_Na	030916	



317 Elm Street Milford, NH 03055

Lab ID: 19060405

Date Received: 6/25/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

7/3/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060405

Lab ID: 19060405

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry, NH

Lab ID: 19060405

Sample Receiving and Comment Summary

ĺ	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"



Analytical Results

Lab ID:

Date:

19060405

7/3/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19060405

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location: 19 Teton Dr Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Matrix	
19060405-001	MTBE_2800				6/20/20	19 11:55:00 AM	Drinking water	
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	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-Dichloroeth	1.1-Dichloroethene		< 0.5 ug/L	7		6/28/2019	0.5	LauraB
1,1-Dichloropro	1,1-Dichloropropene		< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorob	Denzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-		EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
1,2-Dibromoeth		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		6/28/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,2-Dichloropro		EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorob	•	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethyll		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorober		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropro		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorober	•	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropro		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
	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Prop		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-Isopropyltolue		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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichloror		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 Disulfid		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Carbon Tetrach		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
		0	. 5.5 dg/L				5.0	

Page 1 of 3



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

Sample	Client Sample Ide	ntity		Start Date/T	Matrix			
19060405-001	MTBE_2800				6/20/20	19 11:55:00 AM	Drinki	ing water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 1 ug/L			6/28/2019	1	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofurar	ì	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
Trichlorofluoron	nethane	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
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.



2

3

4

6

8

10 44

13

14



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

orlette.johnson@testamericainc.com

LINKS

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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.

Laboratory Job ID: 320-51558-2 SDG: 7 Gardner Circle - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

Qualifiers

LC	MS
A	1:4: _

RER

RPD TEF

TEQ

RL

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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							

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

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 1.4° 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" gualifier 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

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry 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		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	JI	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	JB	1.8	0.15	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	JI	1.8	0.49	na/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

Client Sample ID: MTBE_4073

M2-8:2 FTS

Lab Sample ID: 320-51558-2 Date Collected: 06/17/19 15:50 **Matrix: Water** Date Received: 06/21/19 09:20

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	3.0		1.8		ng/L		06/27/19 05:00	06/30/19 07:24	
Perfluoropentanoic acid (PFPeA)	1.6	J	1.8	0.44	ng/L		06/27/19 05:00	06/30/19 07:24	
Perfluorohexanoic acid (PFHxA)	1.6	JI	1.8	0.53	ng/L		06/27/19 05:00	06/30/19 07:24	•
Perfluoroheptanoic acid (PFHpA)	0.79	J	1.8	0.23	ng/L		06/27/19 05:00	06/30/19 07:24	,
Perfluorooctanoic acid (PFOA)	4.5		1.8	0.77	ng/L		06/27/19 05:00	06/30/19 07:24	•
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		06/27/19 05:00	06/30/19 07:24	
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/27/19 05:00	06/30/19 07:24	· · · · · · · · ·
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		06/27/19 05:00	06/30/19 07:24	•
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		06/27/19 05:00	06/30/19 07:24	•
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/27/19 05:00	06/30/19 07:24	
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/27/19 05:00	06/30/19 07:24	
Perfluorobutanesulfonic acid (PFBS)	2.4		1.8	0.18	ng/L		06/27/19 05:00	06/30/19 07:24	•
Perfluorohexanesulfonic acid (PFHxS)	1.3	JB	1.8	0.15	ng/L		06/27/19 05:00	06/30/19 07:24	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		06/27/19 05:00	06/30/19 07:24	,
Perfluorooctanesulfonic acid (PFOS)	1.5	JI	1.8	0.49	ng/L		06/27/19 05:00	06/30/19 07:24	•
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		06/27/19 05:00	06/30/19 07:24	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.8	1.1	ng/L		06/27/19 05:00	06/30/19 07:24	,
6:2 FTS	ND		9.1	1.8	ng/L		06/27/19 05:00	06/30/19 07:24	•
8:2 FTS	ND		1.8	0.34	ng/L		06/27/19 05:00	06/30/19 07:24	,
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.81	ng/L		06/27/19 05:00	06/30/19 07:24	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	82		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C5 PFPeA	91		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C2 PFHxA	86		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C4 PFHpA	91		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C4 PFOA	94		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C5 PFNA	93		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C2 PFDA	94		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C2 PFUnA	92		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C2 PFDoA	87		50 - 150				06/27/19 05:00	06/30/19 07:24	-
13C2 PFTeDA	81		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C3 PFBS	90		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C2 PFHxDA	52		50 - 150				06/27/19 05:00	06/30/19 07:24	
1802 PFHxS	92		50 - 150				06/27/19 05:00	06/30/19 07:24	
13C4 PFOS	91		50 ₋ 150				06/27/19 05:00	06/30/19 07:24	
d3-NMeFOSAA	99		50 - 150					06/30/19 07:24	
M2-6:2 FTS	107		50 - 150					06/30/19 07:24	
			50 450				00/07/40 05 00	00/00/40 07.04	

06/27/19 05:00 06/30/19 07:24

50 - 150

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51558-2	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

7/16/2019

Lab Sample ID: MB 320-304060/1-A

Matrix: Water

Analysis Batch: 304828

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

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

Prep Type: Total/NA Prep Batch: 304060

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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							Prep Type: Total/NA
Analysis Batch: 304828							Prep Batch: 304060
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 17 7/16/2019

Lab Sample ID: LCS 320-304060/2-A

Matrix: Water

Analyte

Analysis Batch: 304828

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

M2-6:2 FTS

M2-8:2 FTS

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

Spike

Added

LCS LCS

Result Qualifier Unit

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

Client Sample ID	: Lab Control Sample
	Dren Types Total/NA

D %Rec

97

91

101

104

103

102

67 - 127

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

Limits

Prep Type: Total/NA Prep Batch: 304060 %Rec.

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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	40.0	37.0	ng/L	92	60 - 120
(PFUnA)			_		
Perfluorododecanoic acid	40.0	42.5	ng/L	106	71 - 131
(PFDoA)					
Perfluorotridecanoic acid	40.0	40.6	ng/L	102	72 - 132
(PFTriA)	40.0	40.4		404	00 400
Perfluorotetradecanoic acid	40.0	40.4	ng/L	101	68 - 128
(PFTeA)	25.4	25.0		400	70 400
Perfluorobutanesulfonic acid	35.4	35.2	ng/L	100	73 - 133
(PFBS)	00.4	22.0			
Perfluorohexanesulfonic acid	36.4	33.0	ng/L	91	63 - 123
(PFHxS)	00.4	07.0		00	00 100
Perfluoroheptanesulfonic Acid	38.1	37.6	ng/L	99	68 - 128
(PFHpS)					

37.1

38.6

40.0

37.9

38.3

40.0

36.0

35.2

40.2

39.5

39.4

40.8

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

(PFHxDA)			
	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 PFHxS	92		50 - 150
13C4 PFOS	89		50 - 150
d3-NMeFOSAA	94		50 - 150

93

94

50 - 150

50 - 150

Lab Sample ID: LCSD 320-304060/3-A

Job ID: 320-51558-2 Project/Site: DWGTF_Londonderry SDG: 7 Gardner Circle - Londonderry, NH

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

Client Sample II): Lab Control	Sample Dup
	Prep Ty	pe: Total/NA
	Danie D	-4-1- 004000

Matrix: Water Analysis Batch: 304828	Spike	LCSD	LCSD				Prep Ty Prep Ba %Rec.		
Analyte	Added	_	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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	40.0	39.3	1	ng/L		98	72 - 132	4	30

Isotope Dilution	%Recovery	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

LCSD LCSD

(PFHxDA)

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

Eurofins TestAmerica, Sacramento

7/16/2019

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF_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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51558-2 SDG: 7 Gardner Circle - Londonderry, NH Project/Site: DWGTF_Londonderry

Client Sample ID: MTBE_4073

Date Received: 06/21/19 09:20

Lab Sample ID: 320-51558-2 Date Collected: 06/17/19 15:50

Matrix: Water

Batch **Batch** Dil Initial Final **Batch** Prepared Method Factor **Prep Type** Type Run **Amount Amount** Number or Analyzed Analyst Lab 304060 Total/NA Prep 3535 275.9 mL 10.0 mL 06/27/19 05:00 MTN TAL SAC Total/NA 06/30/19 07:24 P1N TAL SAC Analysis EPA 537(Mod) 304828 1

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.

IAB	DoD			L2468	01-20-21	
The following analytes the agency does not do	•	ort, but the laboratory	is not certified by the	e governing authority. Th	nis list may include analytes for whic	
Analysis Method	Prep Method	Matrix	Analyt	е		
EPA 537(Mod)	3535	Water	6:2 FT	S		
EPA 537(Mod)	3535	Water	8:2 FT	S		
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfon NMeFOSAA)	amidoacetic	
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (F	PFBS)	
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)		
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (I	PFDS)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA))	
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)			
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	(PFHpS)	
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHp	A)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (F	PFHxS)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA	A)	
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)	
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA))	
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic acid (F	PFOS)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)		
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFPe	A)	
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (Pl	FTeA)	
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFT)	riA)	
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFL	JnA)	

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

Eurofins TestAmerica, Sacramento

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

4761 6866 7137

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. RizzA Johnson, Orlette S Client Information Client Contact: Paga 603-499-2007 Derek Bennett orlette.johnson@testamericainc.com Job #: **Analysis Requested** New Hampshire Dept of Environ Services Address Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M-Hexane City: TAT Requested (days): B-NaOH N - None PFC IDA - (MOD) PFAS, Standard List (A Chalytes) Concord C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 NH, 03302 F - MeOH H - Na2S203 G - Amehler 5-H2504 Purchase Order not required (603) 271-8520 H - Ascorbic Acid T - TSP Dodecahydrate U - Acetone - ice Perform MS/MSD (Yes or No) derek.bennett@des.nh.gov Pay using 3904 J - DI Water V-MCAA K-EDTA W - pH 4-5 Project #: L-EDA Z - other (specify) ITUSTEUNG Landondorny DUGTF- Lundondern SSOWin Other: Londonderry, NH Number Matrix Sample Type Total Sample (C=comp. Sample Identification Sample Date Time G=grab) Special Instructions/Note: Preservation Code: NOB-072 DW M+BE-407.3 6 DW NOR _ 073 DW Possible Hazard Identification Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by NHDES 6 /21 ETA-SAC 920 Custody Spals Intact: Custody Seal No.: Cooler Temperature(s) "C and Other Remarks: 806035 A/Yes/ A No

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Ver: 08/04/2016

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Job Number: 320-51558-2

SDG Number: 7 Gardner Circle - Londonderry, NH

Login Number: 51558 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



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 Certification #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

SM 4500 NO2B

NH

Nitrate

Nitrite-N

<u>Analyte</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>metnoa</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	06/18/2019 12:00	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

mg/L

06/18/2019 12:25

Reporting

0.01

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
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

RP te Rec'd:

80.000 tille: TC

1000 tille: TC

153 West Road Canterbury, NH 03224 Phone: (603)783-9097

E-mail: frontdesk@aquarianlabs.com

A Division of Nelson Analytical, LLC

Jumaround Requirements (check one)	† 1997) Or 2011					\$4				Ž.	ور بهدای د			F	ioi	ect	Info	mai	ion	24.			W.	د این د ارجاد داشی	notion *	er ver de jare	بالمكار عمواني		***	
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	Need Prior App Day Turnaroun Day Turnaroun Day Turnaroun Day Turnaroun Day Turnaroun	d d		Proj Bid	Project #: 95/60,00 Project Name: London Sury Composite: London Sury Composite: A, Rizz 4 Company: 110615 Single Reference:					Project Mana Report Invoice Ph Evolp				port oice Pho E-r	anager: Mark Henkerson ort To: Mark Henkerson ice To: Accounts Parable Phone: 603-114-4182 E-mail: MHenderson & Vobis-Comp.			com													
Sample Informat	on		27.4	V	OCs		83	S١	/OC	6		4,76	Pet	role	ım		3 / 13	Met	als		W	et C	hen	istr	y / Ir	olg	anic	S			l
Sample ID	Collection Date/Time	Sample Matrix	# of Containers	VOCs EPA 8260B/8260C Select Parameter only:	OCs EPA 524.2 Drinking Water relect Parameter only:	1,4-dioxane / EDB 8260B SIM tow tevel	SVOCs EPA 8270C/8270D Full tist / PAH only	PCB Araclors EPA 8082A / 608	Pasticides EPA 80818 / 608	lerbicides IPA 8151A	Drinking Water SOCs (circle) 525.2 / 504.1 / 5087 615.1	TPH Fuel Oil 8100M Diesel Range Organics	IPH Gasoline 8015B Sasoline Range Organics	марер ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	RCRA8 metals circle) Total Tissolved	Ni / Cu / Zn / Fe / Mn (circle) Total / Dissolvod	Sodium / Calcium / Magneslum Total / Dissolved	Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide / Vitrate (Vilfrite Pluoride	pH / Spec Con / Alkalinity (circle analysis requested)	EPA SW845 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314.0: Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspanded Solids (TSS)	TCLP (please also check off the required analyses)	Aquaria	n ID	Page 4 of 4
	5-17-19/1020		#/	> %	> vs	4-B	S IL	<u> </u>	IL III								X				X										
NOB-072 M+BE_4073	5-17-19/1550	DGJ															X												- 2		
Relinquished by: Relinquished by:	Date/Time: Ce/17/19 Date/Time: Date/Time:	163	v	Received by:					Receipt Conditions (laboratory use only): Laboratory Supplied Containers (Val. / No Containers Intact/Properly Label of (Val. / No Were samples delivered on ice?:			ISO 17025 accreditation required?YesNo EDD required?YosNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo																			
Relinquished by:		e: Received by:							Rec	Receipt Temperature: 2.0 C				Does a price quote apply? Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916				ł													



317 Elm Street Milford, NH 03055

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

Lab ID: 19060323

Date Received: 6/20/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

Derek S. Bennett

Concord

Control #:

19060323

Lab ID: Date: 19060323 7/3/2019

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

03302-0

Project Name: MTI

MTBE_01

Project Location: Londonderry, NH

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"



03302-0

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

NHDES MtBE Remediation Bureau

NH

Analytical Results Lab ID:

Date:

Derek S. Bennett

Concord

Control #: 19060323 Project Number: DWGTF Londonderry 19060323 7/3/2019

29 Hazen Drive, PO Box 95

Project Name:

MTBE_01

Project Location: 7 Gardner Circle Londonderry NH

1,1,1,2-Tetrachloroethane	Sample	ient Sample Identity	/			Start Date/T	ime Sampled:	Ma	ntrix
Parameter Method Result MCL Qualifier Analyzed RDL Anal 1,1,1,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 6282019 0.5 Laur 1,1,1,2-Tichloroethane EPA 524.2 < 0.5 ug/L 200 6282019 0.5 Laur 1,1,2-Tichloroethane EPA 524.2 < 0.5 ug/L 5 6282019 0.5 Laur 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,1-Dichloropropene EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,2,3-Tichlorobenzene EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,2-Dibromo-3-Chloropropane EPA 524.2 < 0.5 ug/L 6 6282019 0.5 Laur 1,2-D	19060323-002 MT	TBE_4073				6/17/20	19 3:50:00 PM	Drinki	ng water
Parameter Method Result MCL Qualifier Analyzed RDL Anal 1,1,1,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 6282019 0.5 Laur 1,1,1,2-Tichloroethane EPA 524.2 < 0.5 ug/L 200 6282019 0.5 Laur 1,1,2-Tichloroethane EPA 524.2 < 0.5 ug/L 5 6282019 0.5 Laur 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,1-Dichloropropene EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,2,3-Tichlorobenzene EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L 7 6282019 0.5 Laur 1,2-Dibromo-3-Chloropropane EPA 524.2 < 0.5 ug/L 6 6282019 0.5 Laur 1,2-D							Date/Time		
1,1,1-Trichloroethane EPA 524.2 < 0.5 ug/L 200 6/26/2019 0.5 Laur 1,1,2-Trichloroethane EPA 524.2 < 0.5 ug/L 5 6/26/2019 0.5 Laur 1,1-2-Trichloroethane EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,1-Dichloroptopene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,2-Dichlorobenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur 1,2-Dichlorobenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur </th <th>Parameter</th> <th></th> <th>Method</th> <th>Result</th> <th>MCL</th> <th>Qualifier</th> <th></th> <th>RDL</th> <th>Analyst</th>	Parameter		Method	Result	MCL	Qualifier		RDL	Analyst
1,1,2,2-Tertachloroethane EPA 524.2 < 0.5 ug/L	1,1,1,2-Tetrachloroe	ethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1,2-Trichloroethane EPA 524.2 < 0.5 ug/L	1,1,1-Trichloroethan	ne	EPA 524.2	< 0.5 ug/L	200		6/26/2019	0.5	LauraB
1,1-Dichloroethane EPA 524.2 < 0.5 ug/L	1,1,2,2-Tetrachloroe	ethane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,1-Dichloroethene EPA 524.2 < 0.5 ug/L	1,1,2-Trichloroethan	ne	EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,1-Dichloropropene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethane		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethene		EPA 524.2	< 0.5 ug/L	7		6/26/2019	0.5	LauraB
1,2,3-Trichloropropane EPA 524.2 < 0.5 ug/L	1,1-Dichloropropene	е	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichlorobenze	ene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichloropropa	ane	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane EPA 524.2 < 2 ug/L	1,2,4-Trichlorobenze	ene	EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
1,2-Dibromoethane EPA 524.2 < 0.5 ug/L	1,2,4-Trimethylbenz	zene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dibromo-3-Chlo	ropropane	EPA 524.2	< 2 ug/L			6/26/2019	2	LauraB
1,2-Dichloroethane EPA 524.2 < 0.5 ug/L	1,2-Dibromoethane		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,2-Dichlorobenzen	е	EPA 524.2	< 0.5 ug/L	600		6/26/2019	0.5	LauraB
1,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,2-Dichloroethane		EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
1,3,5-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloropropane	е	EPA 524.2		5		6/26/2019	0.5	LauraB
1,3,5-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,3,5-Trichlorobenze	ene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,3-Dichloropropane EPA 524.2 < 0.5 ug/L	1,3,5-Trimethylbenz	zene	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
1,4-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3-Dichlorobenzen	е	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,3-Dichloropropane	е	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Chlorotoluene EPA 524.2 < 0.5 ug/L	1,4-Dichlorobenzen	е	EPA 524.2	< 0.5 ug/L	75		6/26/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE)	2,2-Dichloropropane	е	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Hexanone EPA 524.2 < 12 ug/L	2-Chlorotoluene		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
2-Methoxy-2-Methyl Butane (TAME) EPA 524.2 < 0.5 ug/L	2-Ethoxy-2-Methyl F	Propane (ETBE)	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	2-Hexanone		EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
2-Methyl-2-Propanol (TBA) EPA 524.2 < 12 ug/L	2-Methoxy-2-Methyl	Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
4-Chlorotoluene EPA 524.2 < 0.5 ug/L	2-Methoxy-2-Methyl	Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/26/2019	0.5	LauraB
4-Isopropyltoluene EPA 524.2 < 0.5 ug/L	2-Methyl-2-Propano	ol (TBA)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Acetone EPA 524.2 < 12 ug/L 6/26/2019 12 Laur Benzene EPA 524.2 < 0.5 ug/L	4-Chlorotoluene		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Benzene EPA 524.2 < 0.5 ug/L 5 6/26/2019 0.5 Laur	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
Bromobenzene EPA 524.2 < 0.5 ug/L 6/26/2019 0.5 Laur	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
	Bromochloromethar	ne	EPA 524.2				6/26/2019	0.5	LauraB
Bromodichloromethane EPA 524.2 < 0.5 ug/L 100 6/26/2019 0.5 Laur	Bromodichlorometh	ane	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 Laur	Bromoform		EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
	Bromomethane		EPA 524.2				6/26/2019	0.5	LauraB
	Carbon Disulfide		EPA 524.2				6/26/2019	0.5	LauraB
	Carbon Tetrachlorid	le	EPA 524.2		5		6/26/2019	0.5	LauraB
	Chlorobenzene		EPA 524.2		100		6/26/2019	0.5	LauraB

Page 1 of 3



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

Parameter Method Result MCL Qualifier Ana Chloroethane EPA 524.2 < 0.5 ug/L 100 628 Chloroform EPA 524.2 < 0.5 ug/L 100 628 Chloromethane EPA 524.2 < 0.5 ug/L 70 628 Cis-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L 70 628 Cis-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 100 628 Dibromochloromethane EPA 524.2 < 0.5 ug/L 100 628 Dibromomethane EPA 524.2 < 0.5 ug/L 100 628 Dichlorodifluoromethane EPA 524.2 < 0.5 ug/L 700 628 Ethyl Ether EPA 524.2 < 0.5 ug/L 628 628<	Cli	lient San	ple Identity		 		Start Date/	Time Sampled:	Ma	atrix
Parameter Method Result MCL Qualifier Ana Chloroethane EPA 524.2 < 0.5 ug/L 100 628 Chloroform EPA 524.2 < 0.5 ug/L 100 628 Chloromethane EPA 524.2 < 0.5 ug/L 70 628 Cis-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L 70 628 Cis-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 100 628 Dibromochloromethane EPA 524.2 < 0.5 ug/L 100 628 Dibromomethane EPA 524.2 < 0.5 ug/L 100 628 Dichlorodifluoromethane EPA 524.2 < 0.5 ug/L 700 628 Ethyl Ether EPA 524.2 < 0.5 ug/L 628 628<	М	/ITBE_407	3				6/17/20	019 3:50:00 PM	Drinki	ing water
Chloroform				Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
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	100		6/26/2019	0.5	LauraB
Cis-1,3-Dichloropropene	9			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dibromochloromethane EPA 524.2 < 0.5 ug/L	oethe	hene		EPA 524.2	< 0.5 ug/L	70		6/26/2019	0.5	LauraB
Dibromomethane EPA 524.2 Dichlorodifluoromethane EPA 524.2 Dic	opro	opene		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Dichlorodifluoromethane	meth	hane		EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Diethyl Ether	ne			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Di-Isopropyl Ether	omet	ethane		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Ethylbenzene				EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Hexachlorobutadiene	her			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sopropylbenzene				EPA 524.2	< 0.5 ug/L	700		6/26/2019	0.5	LauraB
Methyl ethyl ketone (MEK) EPA 524.2 < 12 ug/L	adien	ene		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methyl isobutyl ketone (MIBK) EPA 524.2 < 12 ug/L	ene			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Methylene Chloride EPA 524.2 < 0.5 ug/L	tone	e (MEK)		EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Naphthalene EPA 524.2 < 0.5 ug/L	keto	tone (MIB	<)	EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
N-Butylbenzene EPA 524.2 < 0.5 ug/L 6/26 N-Propylbenzene EPA 524.2 < 0.5 ug/L 6/26 Sec-Butylbenzene EPA 524.2 < 0.5 ug/L 6/26 Styrene EPA 524.2 < 0.5 ug/L 100 6/26 Tert-Butylbenzene EPA 524.2 < 0.5 ug/L 100 6/26 Tetrachloroethene EPA 524.2 < 0.5 ug/L 5 6/26 Tetrahydrofuran EPA 524.2 < 0.5 ug/L 5 6/26 Total Xylenes EPA 524.2 < 0.5 ug/L 1000 6/26 Trans-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L 1000 6/26 Trans-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 1000 6/26 Trans-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 1000 6/26	oride	е		EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
N-Propylbenzene EPA 524.2 < 0.5 ug/L 6/26 Sec-Butylbenzene EPA 524.2 < 0.5 ug/L 100 6/26 Styrene EPA 524.2 < 0.5 ug/L 100 6/26 Tert-Butylbenzene EPA 524.2 < 0.5 ug/L 5 6/26 Tetrachloroethene EPA 524.2 < 0.5 ug/L 5 6/26 Tetrahydrofuran EPA 524.2 < 0.5 ug/L 5 6/26 Total Xylenes EPA 524.2 < 0.5 ug/L 1000 6/26 Trans-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L 1000 6/26 Trans-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 1000 6/26				EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Sec-Butylbenzene EPA 524.2 < 0.5 ug/L	е			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Styrene EPA 524.2 < 0.5 ug/L	ne			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tert-Butylbenzene EPA 524.2 < 0.5 ug/L	ene			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Tetrachloroethene EPA 524.2 < 0.5 ug/L				EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
Tetrahydrofuran EPA 524.2 < 12 ug/L	ene			EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Toluene EPA 524.2 < 0.5 ug/L 1000 6/26 Total Xylenes EPA 524.2 < 0.5 ug/L 10000 6/26 Trans-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L 1000 6/26 Trans-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 6/26	ene			EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Total Xylenes EPA 524.2 < 0.5 ug/L	n			EPA 524.2	< 12 ug/L			6/26/2019	12	LauraB
Trans-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L				EPA 524.2	< 0.5 ug/L	1000		6/26/2019	0.5	LauraB
Trans-1,3-Dichloropropene EPA 524.2 < 0.5 ug/L 6/26				EPA 524.2	< 0.5 ug/L	10000)	6/26/2019	0.5	LauraB
Trans 1,0 Distributoping	loroe	ethene		EPA 524.2	< 0.5 ug/L	100		6/26/2019	0.5	LauraB
	lorop	propene		EPA 524.2	< 0.5 ug/L			6/26/2019	0.5	LauraB
Trichloroethene EPA 524.2 < 0.5 ug/L ⁵ ^{6/26}	е .	-		EPA 524.2	< 0.5 ug/L	5		6/26/2019	0.5	LauraB
Trichlorofluoromethane EPA 524.2 < 0.5 ug/L 6/26	meth	hane		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				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.

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:

🔅 eurofins

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

Wheth & Gehard

Authorized for release by: 6/12/2019 7:21:44 AM

Orlette Johnson, Senior Project Manager (484)685-0864

orlette.johnson@testamericainc.com

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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.

Laboratory Job ID: 320-50330-5 SDG: 9 Acropolis Ave. - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

Qualifiers

RL

RPD

TEF

TEQ

Qualifier	Qualifier Description
В	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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

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 1.0° 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.

Job ID: 320-50330-5

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry 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	В	1.9	0.33	ng/L		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	JB	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	JB	1.9	0.28	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.2	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	JB	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	В	9.5	1.9	na/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

Client Sample ID: MTBE_1115

Lab Sample ID: 320-50330-5 Date Collected: 05/09/19 10:35 **Matrix: Water** Date Received: 05/15/19 09:30

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.9	В	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	JB	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	В	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:02	1
Perfluorohexanesulfonic acid (PFHxS)	1.4	JB	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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 22:02	1
6:2 FTS `	24	В	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				•	05/27/19 22:02	
13C5 PFPeA	94		50 ₋ 150					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					05/27/19 22:02	1
13C5 PFNA	101		50 ₋ 150					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					05/27/19 22:02	1
13C2 PFDoA	105		50 - 150					05/27/19 22:02	1
13C2 PFTeDA	102		50 - 150					05/27/19 22:02	
13C3 PFBS	100		50 - 150					05/27/19 22:02	1
13C2 PFHxDA	71		50 - 150 50 - 150					05/27/19 22:02	1
1802 PFHxS	95		50 - 150 50 - 150					05/27/19 22:02	
13C4 PFOS	96		50 - 150 50 - 150					05/27/19 22:02	1
d3-NMeFOSAA	90		50 - 150 50 - 150					05/27/19 22:02	1

05/22/19 09:19 05/27/19 22:02

50 - 150

108

M2-8:2 FTS

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-5	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/12/2019

Lab Sample ID: MB 320-296191/1-A

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

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

Prep Type: Total/NA

Matrix: Water Analysis Batch: 297184 Prep Batch: 296191 MR MR

	MR	MR							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

	MB	MB				
Isotope Dilution	%Recovery	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
1802 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						•	Prep Type: Total/NA
Analysis Batch: 297184							Prep Batch: 296191
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L	-	113	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

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Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 297184

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

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

Client Sample	ID:	Lab	Cont	rol	Sam	ple
		Pror	Type	٠ ٦	Cotal/	NΔ

Prep Type: Total/NA
Prep Batch: 296191
%Rec.

Analysis Batch. 237 104	Spike	LCS	LCS		%Rec.	
Analyte	Added		Qualifier Unit	D %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-methylperfluorooctanesulfona midoacetic 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	40.0	39.7	ng/L	99	72 - 132	

,	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

Lab Sample ID: LCSD 320-296191/3-A

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

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

Client Sample ID: Lab Control Sample Du	p
Prep Type: Total/N	Α
Draw Databy 20040	14

Matrix: Water Analysis Batch: 297184					ampie ib. i	Prep Ty Prep B	pe: Tot	al/NA 96191
Analyte	Spike Added		LCSD Qualifier	Unit	D %Re	%Rec. c Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)		43.0	Qualifier	ng/L	— 5 //// 10		5	30
Perfluoropentanoic acid (PFPeA)	40.0	36.9		ng/L		2 66 - 126	4	30
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		8 66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L	10		4	30
Perfluorooctanoic acid (PFOA)	40.0	38.9		ng/L	9		4	30
, ,	40.0	41.3			10		2	30
Perfluorononanoic acid (PFNA)				ng/L				30
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L	10		5	
Perfluoroundecanoic acid (PFUnA)	40.0	41.3		ng/L	10	3 60 - 120	4	30
Perfluorododecanoic acid	40.0	40.4		ng/L	10	1 71 - 131	7	30
(PFDoA)								
Perfluorotridecanoic acid	40.0	41.1		ng/L	10	3 72 - 132	9	30
(PFTriA)								
Perfluorotetradecanoic acid	40.0	35.6		ng/L	8	9 68 - 128	3	30
(PFTeA)	0.5.4			,,	4.0	. 70 100		
Perfluorobutanesulfonic acid (PFBS)	35.4	36.5		ng/L	10	3 73 - 133	1	30
Perfluorohexanesulfonic acid	36.4	33.6		ng/L	9	2 63 - 123	4	30
(PFHxS)								
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.9		ng/L	10	5 68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)	37.1	37.3		ng/L	10	1 67 - 127	7	30
Perfluorodecanesulfonic acid	38.6	39.7		ng/L	10	3 68 - 128	2	30
(PFDS)	40.0	20.7		/	0	0 07 407	0	20
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	39.7		ng/L	9		8	30
6:2 FTS	37.9	47.7		ng/L	12	6 66 - 126	17	30
8:2 FTS	38.3	37.6		ng/L	9	8 67 - 127	4	30
Perfluoro-n-hexadecanoic acid	40.0	38.4		ng/L	9	6 72 - 132	3	30

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

(PFHxDA)

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry 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/	11-A Method Blank	Total/NA	Water	3535	
LCS 320-296191	I/2-A Lab Control Sample	Total/NA	Water	3535	
LCSD 320-29619	91/3-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

Job ID: 320-50330-5 Project/Site: TrustFund_Londonderry SDG: 9 Acropolis Ave. - Londonderry, NH

Client Sample ID: MTBE_1115

Date Collected: 05/09/19 10:35

Matrix: Water Date Received: 05/15/19 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

Lab Sample ID: 320-50330-5

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.

IAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	rt, but the laboratory	is not certified by the	e governing authority. T	his list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfor NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid (I	PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA))
EPA 537(Mod)	3535	Water	Perflu	orodecanesulfonic acid ((PFDS)
EPA 537(Mod)	3535	Water	Perflu	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perflu	orododecanoic acid (PFI	DoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	(PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHp	oA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid ((PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHx	A)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic acid	i (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFNA	A)
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic acid (F	PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA))
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFPe	eA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (P	'FTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PFT	riA)
EPA 537(Mod)	3535	Water	Perflu	oroundecanoic acid (PFI	UnA)

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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway

West Sacramento, CA 95605

4604 5366 1238

4604 3566

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

Client Information	Sampler	Kerlss	on		PM: nnson, (Orlette	s	Carrier Tracking No(s):		COC No:	
Client Contact: Derek Bennett	Phone			100	fail: ette inhi	nson@	testamericainc.com			Page:	
Company:	-			10.11		100110		Descripted		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Reques	ted:	-		1		Analysis	Requested		Preservation Co	odes:
29 Hazen Drive					JI					A-HCL	M - Hexane
City: Concord	TAT Requested (c	iays);			71	8				B-NaOH	N - None
State, Zip:	Standard TAT					(ST Analytes)		111111		C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302					41	# An	0/30	111111		E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	d		2		9/0//			G - Amchior H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydra
Email:	WO#:	1			٦ž ۾	Standard List	4			I - Ice J - DI Water	U - Acetone V - MCAA
derek.bennett@des.nh.gov Project Name:	Pay using 3904				Yes or	tand			containers	K-EDTA	W - pH 4-5
TrustFund_Londonderry /					les (18, 8			ntai	L - EDA	Z - other (specify)
Site: Londonderry, NH	SSOW#:				Samp SD ((MOD) PFAS,			05 10		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewster, Sesolid, Oswaste/oil, BT=Tissue, AsAi	Field Filtered Sample (Perform MS/MSD (Yes	PFC_IDA - (MOC			Total Number	Special I	nstructions/Note:
		> <		ation Code:	X				X		
MTBE -1120	5/9/19	0530	6	DW	W	X					
Field Deplicate Mant	5/9/19	0853	6	DW	4	×					
NOS-044 15Tyler RD Landonkers, NH	5/9/19	0925	6	DW	N	×		0.0000000000000000000000000000000000000			
MTBE _ 1123	5/19	1015	6	DW	N	k					
MTBE-1115	5/9/19	1035	6	DW	U	X					
NOB-045,25 Severance of handy lety At	5/9/19	1415	6	DW	M	λ		320-50330 Chain of 0	Custody		
TNK-DW-4	579/19	1145	6	Du	4	x		1 1 1 1 1 1			
NOR- 1916 Warst Landonderry . NH	519/19	1240	6	DW	N	K					
NOB-045,25 Exercince on howevery, No TNIC-DW-4 NOB-046, Illivest, Lowenderry, NH HTBE-1118	5/9/19	1345	6	سلا	N	X					
Possible Hazard Identification					Sa	mple	Disposal (A fee may	be assessed if samples	s are retain	ed longer than 1	month)
Non-Hazard Flammable Skin Irritant Poisc	on B Unkni	own \square_F	adiological		1	\square_{Re}	turn To Client	Disposal By Lab		ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)					Sp	ecial li	structions/QC Requir	ements:			
Empty Kit Relinquished by:		Date:			Time:			Method of Snipme	nt		
Figure 1997	Sto/19	0815		Company .	(Regell	DEA	- 5.4° Date/	19/201	9 0919	NHDES
Hetinguishad by:	5/14/19	1322		Company	24	Hosel S	Doing Coole	Date of	me:1 /14/19	1320	Company WHDE
Remausned w:	Date/Time:	1 700		Company		Receiv	ed by:	Date/#			Company
Custody Seals Intact: Custody Seal No.: 30 612						Coller	Temperature(s) C and Ot	has Demades			
MYes A No 30012								1.0	9K-8		-

Job Number: 320-50330-5

SDG Number: 9 Acropolis Ave. - Londonderry, NH

Login Number: 50330 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

Creator: Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

NELSON ANALYTICAL LAB



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

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

Date Reported:

17-May-19 11:25

REPORT OF ANALYSIS

119051162.04

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 Drinking Water, MTBE_1115

sampled Date: 09-May-2019 10:35

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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

Analytical Results

Lab ID:

Date:

Derek S. Bennett

Control #: 19050245

19050245

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

6/10/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location:

Sample Client Sar	mple Identity			Start Date/T	ime Sampled:	Ma	itrix
19050245-005 MTBE_11	15		'	5/9/201	9 10:35:00 AM	Drinki	ng water
					Date/Time		
Parameter	Method	Result	MCL	Qualifier	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-Chloropropa	ne 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 Propan	ie (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

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/Time Sampled:		Ma	atrix
19050245-005	MTBE_1115				5/9/201	9 10:35:00 AM	Drinki	ing 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-Dichlord	pethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloron	nethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofurar	١	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.

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:

🔅 eurofins

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

LINKS

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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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

Qualifiers

1.7		N/I	C
ш	U	IVI	J

RL

RPD

TEF

TEQ

Qualifier	Qualifier Description
В	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)

6/12/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

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 1.0° 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.

Job ID: 320-50330-3

3

4

6

10

12

13

Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

Client Sample ID: NOB_044

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.6	В	1.9	0.33	ng/L		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	В	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	JB	1.9	0.27	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	8.5	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8	В	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	JB	9.3	1.9	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

Client Sample ID: NOB_044

Lab Sample ID: 320-50330-3 Date Collected: 05/09/19 09:25 **Matrix: Water**

Date Received: 05/15/19 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	4.6	В	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 21:46	
Perfluoropentanoic acid (PFPeA)	5.7		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluorohexanoic acid (PFHxA)	7.0		1.9	0.54	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluoroheptanoic acid (PFHpA)	3.2	В	1.9	0.23	ng/L		05/22/19 09:19	05/27/19 21:46	
Perfluorooctanoic acid (PFOA)	16		1.9	0.79	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluorononanoic acid (PFNA)	0.45	J	1.9	0.25	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 21:46	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 21:46	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		05/22/19 09:19	05/27/19 21:46	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:46	
Perfluorotetradecanoic acid	0.27	JB	1.9	0.27	ng/L		05/22/19 09:19	05/27/19 21:46	
(PFTeA)					-				
Perfluorobutanesulfonic acid (PFBS)	8.5	В	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluorohexanesulfonic acid (PFHxS)	2.8	В	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 21:46	,
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 21:46	,
Perfluorooctanesulfonic acid (PFOS)	5.3		1.9	0.50	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 21:46	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	1.1	ng/L		05/22/19 09:19	05/27/19 21:46	,
6:2 FTS `	3.8	JB	9.3	1.9	ng/L		05/22/19 09:19	05/27/19 21:46	•
8:2 FTS	ND		1.9	0.35	ng/L		05/22/19 09:19	05/27/19 21:46	•
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.83	ng/L		05/22/19 09:19	05/27/19 21:46	•
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	84		50 - 150				05/22/19 09:19	05/27/19 21:46	
13C5 PFPeA	90		50 - 150				05/22/19 09:19	05/27/19 21:46	
13C2 PFHxA	87		50 - 150				05/22/19 09:19	05/27/19 21:46	
13C4 PFHpA	91		50 ₋ 150				05/22/19 09:19	05/27/19 21:46	
13C4 PFOA	97		50 ₋ 150				05/22/19 09:19	05/27/19 21:46	
13C5 PFNA	95		50 - 150				05/22/19 09:19	05/27/19 21:46	
13C2 PFDA	94		50 ₋ 150				05/22/19 09:19	05/27/19 21:46	
13C2 PFUnA	97		50 ₋ 150				05/22/19 09:19	05/27/19 21:46	
13C2 PFDoA	100		50 - 150				05/22/19 09:19	05/27/19 21:46	
13C2 PFTeDA	89		50 ₋ 150				05/22/19 09:19	05/27/19 21:46	
13C3 PFBS	97		50 - 150				05/22/19 09:19	05/27/19 21:46	
13C2 PFHxDA	63		50 ₋ 150					05/27/19 21:46	
1802 PFHxS	95		50 - 150					05/27/19 21:46	
13C4 PFOS	94		50 ₋ 150					05/27/19 21:46	
d3-NMeFOSAA	88		50 - 150					05/27/19 21:46	
M2-6:2 FTS	73		50 - 150					05/27/19 21:46	
-									

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-3	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Currente Levend									

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

Eurofins TestAmerica, Sacramento

6/12/2019

Lab Sample ID: MB 320-296191/1-A

Matrix: Water

Analysis Batch: 297184

Perfluoroheptanesulfonic Acid

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

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

Prep Type: Total/NA **Prep Batch: 296191**

l		MB	MB							
	Analyte	Result	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
ı	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		05/22/19 09:19	05/27/19 21:06	1
ı	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		05/22/19 09:19	05/27/19 21:06	1
ı	Perfluoroheptanoic acid (PFHpA)	0.360	J	2.0	0.25	ng/L		05/22/19 09:19	05/27/19 21:06	1
ı	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
ı	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	1
١	Perfluoroundecanoic acid (PFLInA)	ND		2.0	11	na/l		05/22/19 09:19	05/27/19 21:06	1

Pé Perfluoroundecanoic acid (PFUnA) 05/22/19 09:19 05/27/19 21:06 1.1 ng/L ΝU 2.0 Perfluorododecanoic acid (PFDoA) ND 2.0 0.55 ng/L 05/22/19 09:19 05/27/19 21:06 Perfluorotridecanoic acid (PFTriA) ND 2.0 05/22/19 09:19 05/27/19 21:06 1.3 ng/L Perfluorotetradecanoic acid (PFTeA) 0.540 J 2.0 0.29 ng/L 05/22/19 09:19 05/27/19 21:06 05/22/19 09:19 05/27/19 21:06 Perfluorobutanesulfonic acid (PFBS) 0.202 J 20 0.20 ng/L Perfluorohexanesulfonic acid (PFHxS) 0.453 J 2.0 0.17 ng/L 05/22/19 09:19 05/27/19 21:06 ND 05/22/19 09:19 05/27/19 21:06 2.0 0.19 ng/L

(PFHpS) Perfluorooctanesulfonic acid (PFOS) ND 2.0 0.54 na/L 05/22/19 09:19 05/27/19 21:06 Perfluorodecanesulfonic acid (PFDS) ND 2.0 0.32 ng/L 05/22/19 09:19 05/27/19 21:06 ND 2.0 05/22/19 09:19 05/27/19 21:06 N-methylperfluorooctanesulfonamidoa 1.2 ng/L cetic acid (NMeFOSAA)

6:2 FTS 2.45 J 10 2.0 ng/L 05/22/19 09:19 05/27/19 21:06 8:2 FTS ND 2.0 0.38 ng/L 05/22/19 09:19 05/27/19 21:06 ND 2.0 0.89 ng/L 05/22/19 09:19 05/27/19 21:06 Perfluoro-n-hexadecanoic acid

(PFHxDA) MB MB Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 13C4 PFBA 86 50 - 150 05/22/19 09:19 05/27/19 21:06 13C5 PFPeA 96 50 - 150 05/22/19 09:19 05/27/19 21:06 89 50 - 150 13C2 PFHxA 05/22/19 09:19 05/27/19 21:06 13C4 PFHpA 90 50 - 150 05/22/19 09:19 05/27/19 21:06 13C4 PFOA 96 50 - 150 05/22/19 09:19 05/27/19 21:06 13C5 PFNA 96 50 - 150 05/22/19 09:19 05/27/19 21:06 13C2 PFDA 95 50 - 150 05/22/19 09:19 05/27/19 21:06 13C2 PFUnA 99 50 - 150 05/22/19 09:19 05/27/19 21:06 13C2 PFDoA 95 50 - 150 05/22/19 09:19 05/27/19 21:06 13C2 PFTeDA 82 50 - 150 05/22/19 09:19 05/27/19 21:06 13C3 PFBS 88 50 - 150 05/22/19 09:19 05/27/19 21:06 13C2 PFHxDA 51 50 - 150 05/22/19 09:19 05/27/19 21:06 1802 PFHxS 87 50 - 150 05/22/19 09:19 05/27/19 21:06 13C4 PFOS 91 50 - 150 05/22/19 09:19 05/27/19 21:06 d3-NMeFOSAA 78 50 - 150 05/22/19 09:19 05/27/19 21:06 79 M2-6:2 FTS 50 - 150 05/22/19 09:19 05/27/19 21:06

Lab Sample ID: LCS 320-296191/2-A

M2-8:2 FTS

Matrix: Water							Prep Type: Total/NA
Analysis Batch: 297184							Prep Batch: 296191
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L	_	113	70 - 130

50 - 150

95

Eurofins TestAmerica, Sacramento

05/22/19 09:19 05/27/19 21:06

Client Sample ID: Lab Control Sample

Page 8 of 17 6/12/2019

Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 297184

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

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

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

Prep	ı ype: ı	otal/NA
Prep	Batch:	296191
%Rec.		

Analysis Baton. 207 104	Spike	LCS	LCS		%Rec.
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.5	ng/L		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	40.0	45.2	ng/L	113	72 - 132
(PFTriA)			_		
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-methylperfluorooctanesulfona midoacetic 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	40.0	39.7	ng/L	99	72 - 132

L	cs	LCS

	LUS	LUS	
Isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-296191/3-A

Matrix: Water

(PFHxDA)

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry SDG: 15 Tyler Rd. - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Drop Patch: 206101

matrix rrate.								, , , , , , , , , , , , , , , , , , , 	
Analysis Batch: 297184							Prep Ba	atch: 29	
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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	40.0	38.4		ng/L		96	72 - 132	3	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry 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

Job ID: 320-50330-3 Project/Site: TrustFund_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority.	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	xA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

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

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6/12/2019

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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway

West Sacramento, CA 95605

4604 5366 1238

4604 3566

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

Client Information	Sampler	Kerlss	on		PM: hnson, I	Orlette S		Carrier Tracking Nots);	COC No:	
Client Contact: Derek Bennett	Phone:			100	fail: ette inhi	nson@te	estamericainc.com			Page:	
Company:	+	-		10.0		10011610		- Demonstrat		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Reques	ted:	_		+	1	Analysi	s Requested		Preservation Co	des:
29 Hazen Drive										A-HCL	M - Hexane
City: Concord	TAT Requested (c	iays):				6				B-NaOH	N - None
State, Zip:	Standard TAT					(at Analytes)				C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302					11	1 4 C	130			E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	d				100/			G - Amchior	S-H2SO4
Email:	WO #:				٦٤ _	IJ P				H - Ascorbic Acid I - Ice	T - TSP Dodecahydrat U - Acetone
derek,bennett@des.nh.gov	Pay using 3904 Project #:			(Yes or	Standard List			Sie	J - DI Water V - MCAA K - EDTA W - pH 4-5		
Project Name: TrustFund_Londonderry				9 (Ye	Sta			containers	L-EDA	Z - other (specify)	
Site:	SSOW#:				ered Sample ((MOD) PFAS,	1111		l los	Other:	
Londonderry, NH					ASE MSE	100	1 1 1 1		10		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wawater, Sasolid, Oxwaste/oil. BT=Tissus, AnAi	eld Filt	PFC_IDA - (MC			Total Number	Special In	structions/Note:
Sample facilities		><		ation Code:	XX				X		
MTBE -1120	5/9/19	0530	6	DW	W	X					
Field Deplicate Man & NOS 044, 157 pler RD, Landenbury, NH	5/9/19	0853-	6	DW	M	×					
NOS-044 15Tyle RD Landenders, NH	5/9/19	0925	6	DW	N	×		1 1 1 1		No.	
MTBE _ 1123	5/1/19	1015	6	DW	N	x					
MTBE-1115	5/9/19	1035	6	DW	U	X					
NOB-045,25 Severance on howe, where M	5/9/19	1415	G	DW	M	A		320-50330 Chain of	Custody	HI 1111 1111	
TNK-DW-4	5/9/19	1145	6	Du	4	x		1 1 1 1	1-0-1-0		
NOB- ME Wirest Landowberr NH	5/1/19	1240	6	Dw	W	K					
NOB-045,25 Severance or howevery, NA TNK-DW-4 NOB-046, Illivest, Loweverlery, NA MTBE-1118	5/9/19	1345	6	سلا	W	X					
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					1						
Possible Hazard Identification					Sa	mple Di	sposal (A fee may	y be assessed if sample	es are retain	ed longer than 1	month)
Non-Hazard Flammable Skin Irritant Poise	on B Unkn	own \square_F	adiological			-	rn To Client	Disposal By Lab		ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)					Sp	ecial Ins	tructions/QC Requi	rements:			
Empty Kit Relinquished by:		Date:			Time:			Method of Shipm	ient:		
Relinquished by:	Sto 19	D815		Company .	(Received	100	5.4°C Date	79/201	9 0919	Company
Helinquished by:	Date/Time: 5/14/19	1322		Company N HOE	24	Hoselvet	Doing Tool	Date:	/14/19	1325	Company WHDE
Remagnisherby	Date/Time:	h selected		Company	2	Receiver	by:	Date	115/19		Company TALLS #2
Custody Seals Intact: Custody Seal No.:		-				Cooker To	amperature(s) C and O	the of Demonstra			Linus is
K Yes A No 30612						-		1.0	AK-8		

Job Number: 320-50330-3

SDG Number: 15 Tyler Rd. - Londonderry, NH

Login Number: 50330 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

Creator: Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

NELSON ANALYTICAL LAB



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

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

Date Reported:

17-May-19 11:25

REPORT OF ANALYSIS 119051162.02

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 Drinking Water, NOB_044, Tyler Rd, Londonderry, NH

sampled Date: 09-May-2019 09:25

Nitrate

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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"



03302-0

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

Analytical Results

Lab ID:

Date:

19050245

6/10/2019

NHDES MtBE Remediation Bureau

NH

29 Hazen Drive, PO Box 95

Derek S. Bennett

Concord

Control #: 19050245

Project Number: TrustFund Londonderry

Project Name: MTBE_01

Project Location: 15 Tyler Rd Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19050245-003	NOB_044				5/9/201	9 9:25:00 AM	Drinki	ng water
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachlo	oroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroet	hane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrachlo	oroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroet	hane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroetha	ine	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroethe	ene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloroprop	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobe	enzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichloropr	opane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorobe	enzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethylb	enzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-C	Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dibromoetha	ane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenz	zene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroetha	ine	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloroprop	ane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorobe	enzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethylb	enzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenz		EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloroprop	ane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenz	zene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloroprop	ane	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-Meth	yl 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-Me	thyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
-	thyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Propa		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-Isopropyltolue	ne	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
Bromochloromet	thane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichlorom	ethane	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
		EDA 504.0	=	5		5/17/2019	0.5	ID
Carbon Tetrachle	oride	EPA 524.2	< 0.5 ug/L	5		3/11/2019	0.5	LauraB

Page 1 of 3



Sample	Client Sample Ide	ntity			Start Date/Time Sampled:		Matrix		
19050245-003	NOB_044			<u> </u>	5/9/201	9 9:25:00 AM	Drinki	Drinking water	
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys	
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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB	
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Dibromochloron	nethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB	
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Dichlorodifluoro	methane	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 Eth	ner	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	
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Methyl ethyl ket	tone (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB	
Trans-1,3-Dichl		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	
Trichlorofluoron	nethane	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	



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: 320-50330-8

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 role

Authorized for release by: 8/1/2019 10:01:03 AM

Orlette Johnson, Senior Project Manager (484)685-0864

orlette.johnson@testamericainc.com

Review your project

.....LINKS

results through
Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-50330-8 SDG: 111 West Rd. - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

Qualifiers

	\sim	N/	0
ш	u	IV	J

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
1	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.

TEQ

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

Eurofins TestAmerica, Sacramento

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-8 Project/Site: TrustFund Londonderry 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.

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 1.0° C.

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

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

Client Sample ID: NOB_046

Lab Sam	ple ID:	320-5	0330-8
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Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.8	В	1.9	0.33	ng/L		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	В	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	JB	1.9	0.28	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.7	JB	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3	JB	1.9	0.16	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6	Ì	1.9	0.51	ng/L	1	EPA 537(Mod)	Total/NA
6:2 FTS	3.2	JB	9.5	1.9	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

Client Sample ID: NOB 046

Lab Sample ID: 320-50330-8

Matrix: Water

Date	Collected:	05/09/19	12:40
Date	Received:	05/15/19	09:30

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.8	В	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	В	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	JB	1.9	0.28	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorobutanesulfonic acid (PFBS)	1.7	JB	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:42	1
Perfluorohexanesulfonic acid (PFHxS)	1.3	JB	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			05/27/19 22:42	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		05/22/19 09:19	05/27/19 22:42	1
N-methylperfluorooctanesulfonamidoa cetic 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	JB	9.5		ng/L			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	
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					05/27/19 22:42	1

05/22/19 09:19 05/27/19 22:42

05/22/19 09:19 05/27/19 22:42

05/22/19 09:19 05/27/19 22:42

05/22/19 09:19 05/27/19 22:42

05/22/19 09:19 05/27/19 22:42

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

93

91

87

87

106

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-8	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

8/1/2019 (Rev. 1)

Lab Sample ID: MB 320-296191/1-A

Matrix: Water

Analysis Batch: 297184

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

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

Client	Sample	ID:	Method	Blank
0110116	Gumpio		mounou	-iaiii

Prep Type: Total/NA

Prep Batch: 296191

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)				-		
(1111/0/1)	MB	MB				
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/NA Prep Batch: 296191	
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L	_	113	70 - 130	

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

Analysis Batch: 297184

Perfluorobutanesulfonic acid

Perfluorohexanesulfonic acid

Perfluoroheptanesulfonic Acid

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

(PFBS)

(PFHxS)

(PFHpS)

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

LCS LCS

36.1

34.9

43.4

40.1

40.4

43.0

40.1

36.2

39.7

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

Result Qualifier Unit

Spike

Added

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

Client	Sample ID	: Lab	Contro	I Sample
		Prei	Type:	Total/NA

D %Rec

102

96

114

108

105

108

106

94

99

73 - 133

63 - 123

68 - 128

67 - 127

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

Pr %R

Top Typo: Totaliti	
Prep Batch: 296191	
%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	40.0	39.7	ng/L	99	60 - 120	
(PFUnA)						
Perfluorododecanoic acid	40.0	43.3	ng/L	108	71 - 131	
(PFDoA)						
Perfluorotridecanoic acid	40.0	45.2	ng/L	113	72 - 132	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	36.7	ng/L	92	68 - 128	
(PFTeA)						

35.4

36.4

38.1

37.1

38.6

40.0

37.9

38.3

40.0

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-296191/3-A

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry SDG: 111 West Rd. - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Drop Potoby 206404

Matrix: Water Analysis Batch: 297184					ampie ib. i	Prep Ty Prep B	pe: Tot	al/NA 96191
Analyte	Spike Added		LCSD Qualifier	Unit	D %Re	%Rec. c Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)		43.0	Qualifier	ng/L	— 5 //// 10		5	30
Perfluoropentanoic acid (PFPeA)	40.0	36.9		ng/L		2 66 - 126	4	30
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		8 66 - 126	6	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L	10		4	30
Perfluorooctanoic acid (PFOA)	40.0	38.9		ng/L	9		4	30
, ,	40.0	41.3			10		2	30
Perfluorononanoic acid (PFNA)				ng/L				30
Perfluorodecanoic acid (PFDA)	40.0	39.9		ng/L	10		5	
Perfluoroundecanoic acid (PFUnA)	40.0	41.3		ng/L	10	3 60 - 120	4	30
Perfluorododecanoic acid	40.0	40.4		ng/L	10	1 71 - 131	7	30
(PFDoA)								
Perfluorotridecanoic acid	40.0	41.1		ng/L	10	3 72 - 132	9	30
(PFTriA)								
Perfluorotetradecanoic acid	40.0	35.6		ng/L	8	9 68 - 128	3	30
(PFTeA)	05.4			,,	4.0	. 70 100		
Perfluorobutanesulfonic acid (PFBS)	35.4	36.5		ng/L	10	3 73 - 133	1	30
Perfluorohexanesulfonic acid	36.4	33.6		ng/L	9	2 63 - 123	4	30
(PFHxS)								
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.9		ng/L	10	5 68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)	37.1	37.3		ng/L	10	1 67 - 127	7	30
Perfluorodecanesulfonic acid	38.6	39.7		ng/L	10	3 68 - 128	2	30
(PFDS)	40.0	20.7		/	0	0 07 407	0	20
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	39.7		ng/L	9		8	30
6:2 FTS	37.9	47.7		ng/L	12	6 66 - 126	17	30
8:2 FTS	38.3	37.6		ng/L	9	8 67 - 127	4	30
Perfluoro-n-hexadecanoic acid	40.0	38.4		ng/L	9	6 72 - 132	3	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

(PFHxDA)

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry 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

Job ID: 320-50330-8

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-8 Project/Site: TrustFund_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

IAB	DoD			L2468	01-20-21
The following analytes the agency does not o	•	ort, but the laboratory	v is not certified by the	e governing authority. Th	is list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyte	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	amidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (P	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (F	PFDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (F	PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (P	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

Eurofins TestAmerica, Sacramento

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

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. .

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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway West Sacramento, CA 95605 4604 5366 1238

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Chain of Custody Record

Client Information	Karl .	Karlss	on	1.000	nson, C	Orlette S		Carrier Tracking No(s):		GOG No:
Client Contact: Derek Bennett	Phone:			E-Ma orle		son@tes	tamericains.com			Page:
Company: New Hampshire Dept of Environ Services	**		-				Analysi	s Requested		Job #:
Address 29 Hazen Drive	Due Date Reques	ted:		_	T		Anarysi	S ricquesieu		Preservation Codes:
City:	TAT Requested (d	days):			1		1 1 1 1			A - HCL M - Hexane B - NaOH N - None
Concord State, Zip:	Standard TAT					lytes)				C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
NH, 03302						A O	(30)	111111		E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	ed		6	is of	07/			G - Amchior S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydra
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904	1			or No)	lard			s	I - Ice U - Acetone
Project Name: TrustFund_Londonderry	Project #:				(Yes or	(MOD) PFAS, Standard List (at Analytes)			containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Site	SSOW#:				ered Sample (MS/MSD (Yes	FAS,		111111	cont	Other:
Londonderry, NH		1		- Andr	d Sa	(00			er of	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wawater, Sasolid, Dawaste/oil, BT-Tissue, AsAir)	Field Filtere Perform MS				Total Number	Special Instructions/Note:
ourific racrimination				ation Code:	XX				X	Special management and
MTBE -1120	5/9/19	0530	6	DW	W	K				
Field Deplicate Mark	5/9/19	0853	6	DW	N	×				
MOR-044, 15Tyle RD, Landenberry, NH MTBE - 1123	5/9/19	0925	6	DW	N	×		1 1 1 1 1 1 1		l'
MTBE _ 1123	5/1/19	1015	6	DW	N	k				
MTBE-115	5/9/19	1035	6	DW	N	X				
NOB-045,25 Severance of hand where M	5/9/19	1415	6	DW	M	λ		320-50330 Chain of Cust	odv	
NOB-045,25 Severance of howevery M	5/9/19	1145	6	Du	4	x				
NOB- ME Muest Landonderry, NH	5/1/19	1240	6	DW	N	K				
NOB-016, Illivest, Lowenderry, NH HTBE-1118	5/9/19	1345	6	سد	W	X				
			1							
Possible Hazard Identification					Sai	mple Dis	posal (A fee ma	y be assessed if samples are	retaine	ed longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own F	Radiological		Sne	Return	n To Client uctions/QC Requi	Disposal By Lab	- Archi	ive For Months
Empty Kit Relinquished by:		Date:			Time:	scial man	dollons/QO (requi	Method of Snipment		
Relinquished by:	Date/Time;			Company .	Time.	Regeived to		Date/Time:		Company
for to	5/10/19 Date/Time:	0815		Ver313	-	1	DKI	- 5.4 C 5/9	1201	
Retinquished by:	5/14/19	132)	N HOE	3	Ship	Ding Cools	4.1 4.5/14	119	
Remaushed by:	Date/Time:			Company		Received	ime Bo	Sas Date/Time	110	930 ETALLE
Custody Seals Intact: Custody Seal No.: 30 612						Comer Ten	nperature(s) C and O	the Demade	-8	

4

Job Number: 320-50330-8

SDG Number: 111 West Rd. - Londonderry, NH

Login Number: 50330 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

Sieator. Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	80612
The cooler or samples do not appear to have been compromised or ampered 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	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and he 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	
f 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	



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

NELSON ANALYTICAL LAB



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

NH ELAP Accreditation #NH1005 Maine State Certification #NH01005 Vermont State Certification #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

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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"



NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19050245

Lab ID: 19050245

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

6/10/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 111 West Rd Londonderry NH

19050245-008 NOB_046 Result	Sample Client Sample Identity	y			Start Date/Time Sampled:		Ma	itrix	
Parameter Method Result MCL outlifier Analyzed RDL Analyzed 1,1,1,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 61772019 0.5 LauraB 1,1,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 61772019 0.5 LauraB 1,1,2-Titchloroethane EPA 524.2 < 0.5 ug/L 5 61772019 0.5 LauraB 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 61772019 0.5 LauraB 1,1-Dichloroethene EPA 524.2 < 0.5 ug/L 7 61772019 0.5 LauraB 1,1-Dichloroethene EPA 524.2 < 0.5 ug/L 7 61772019 0.5 LauraB 1,1-Dichlorobenzene EPA 524.2 < 0.5 ug/L 61772019 0.5 LauraB 1,2-3-Trichlorobenzene EPA 524.2 < 0.5 ug/L 61772019 0.5 LauraB 1,2-4-Trimethylbenzene EPA 524.2 < 0.5 ug/L 61772019 0.5 LauraB 1,2-Dichroebenzene EPA 524.2 < 0.5 ug	19050245-008 NOB_046			<u>'</u>	5/9/201	9 12:40:00 PM	Drinki	rinking water	
Parameter Method Result MCL outlifier Analyzed RDL Analyzed 1,1,1,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 61772019 0.5 LauraB 1,1,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 61772019 0.5 LauraB 1,1,2-Titchloroethane EPA 524.2 < 0.5 ug/L 5 61772019 0.5 LauraB 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 61772019 0.5 LauraB 1,1-Dichloroethene EPA 524.2 < 0.5 ug/L 7 61772019 0.5 LauraB 1,1-Dichloroethene EPA 524.2 < 0.5 ug/L 7 61772019 0.5 LauraB 1,1-Dichlorobenzene EPA 524.2 < 0.5 ug/L 61772019 0.5 LauraB 1,2-3-Trichlorobenzene EPA 524.2 < 0.5 ug/L 61772019 0.5 LauraB 1,2-4-Trimethylbenzene EPA 524.2 < 0.5 ug/L 61772019 0.5 LauraB 1,2-Dichroebenzene EPA 524.2 < 0.5 ug						Date/Time			
1,1,1-Trichloroethane EPA 524.2 < 0.5 ug/L 200 \$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-Dichloroethane EPA 524.2 < 0.5 ug/L 5 \$17/2019 0.5 LauraB 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 \$17/2019 0.5 LauraB 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 \$17/2019 0.5 LauraB 1,1-Dichloroethane EPA 524.2 < 0.5 ug/L 7 \$17/2019 0.5 LauraB 1,2-3-Trichloropropene EPA 524.2 < 0.5 ug/L \$17/2019 0.5 LauraB 1,2-3-Trichloropropane EPA 524.2 < 0.5 ug/L \$17/2019 0.5 LauraB 1,2-4-Trimethylbenzene EPA 524.2 < 0.5 ug/L 70 \$17/2019 0.5 LauraB 1,2-Dibromoethane EPA 524.2 < 0.5 ug/L \$17/2019 0.5 LauraB 1,2-Dichloroethane EPA 524.2	Parameter	Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst	
1,1,2,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L	1,1,1,2-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	1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB	
1,1-Dichloroethane EPA 524.2 < 0.5 ug/L	1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,1-Dichloroethene EPA 524.2 < 0.5 ug/L	1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
1,1-Dichloropropene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB	
1,2,3-Trichloropropane EPA 524.2 < 0.5 ug/L	1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2,4-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2-Dibromo-3-Chloropropane EPA 524.2 < 2 ug/L	1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB	
1,2-Dibromoethane EPA 524.2 < 0.5 ug/L	1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB	
1,2-Dichloroethane EPA 524.2 < 0.5 ug/L	1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB	
1,3,5-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
1,3,5-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
1,3-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,3-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,4-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3-Dichlorobenzene	EPA 524.2				5/17/2019	0.5	LauraB	
2,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2-Chlorotoluene EPA 524.2 < 0.5 ug/L	1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB	
2-Ethoxy-2-Methyl Propane (ETBE)	2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2-Hexanone EPA 524.2 < 12 ug/L	2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2-Hexanone EPA 524.2 < 12 ug/L	2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2				5/17/2019	0.5	LauraB	
2-Methoxy-2-Methyl Butane (TAME) EPA 524.2 < 0.5 ug/L	2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB	
2-Methyl-2-Propanol (TBA)	2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2				5/17/2019	0.5	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	2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		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	2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB	
Acetone EPA 524.2 < 12 ug/L 5/17/2019 12 LauraB Benzene EPA 524.2 < 0.5 ug/L	4-Chlorotoluene	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	4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
	Acetone	EPA 524.2				5/17/2019	12	LauraB	
	Benzene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
DIGITION DELICITIES EPA 524.2 < 0.5 ug/L STITZETS U.5 LAUTAB	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	Bromochloromethane					5/17/2019	0.5		
Bromodichloromethane EPA 524.2 < 0.5 ug/L 100 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	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	Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5		
Carbon Disulfide EPA 524.2 < 0.5 ug/L 5/17/2019 0.5 LauraB	Carbon Disulfide	EPA 524.2				5/17/2019	0.5		
Carbon Tetrachloride EPA 524.2 < 0.5 ug/L ⁵ 5/17/2019 0.5 LauraB	Carbon Tetrachloride	EPA 524.2		5		5/17/2019	0.5		
Chlorobenzene EPA 524.2 < 0.5 ug/L 100 5/17/2019 0.5 LauraB	Chlorobenzene	EPA 524.2		100		5/17/2019	0.5		

Page 1 of 3



Sample	Client Sample Ide	entity			Start Date/Time Sampled:		Ма	atrix
19050245-008	NOB_046				5/9/201	9 12:40:00 PM	Drinki	ng 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-Dichlord	pethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	ride	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	9	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofurar	١	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.



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

LINKS

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Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-50812-2 SDG: 12 Mont Vernon Dr - Londonderry, NH

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Definitions/Glossary

Toxicity Equivalent Quotient (Dioxin)

Client: New Hampshire Dept of Environmental Serv Project/Site: DWGTF_Londonderry Job ID: 320-50812-2 SDG: 12 Mont Vernon Dr - Londonderry, NH

Qualifiers

	\sim	N/	0
ш	u	IV	J

TEQ

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
1	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)							

6/12/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

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 1.6° 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

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

Client Sample ID: NOB_051

Analyte	Result Qualifier	RL	MDL Un	it 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 JI	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

Client Sample ID: NOB_051

Lab Sample ID: 320-50812-2

Matrix: Water

Date Collected: 05/21/19 09:45 Date Received: 05/31/19 09:20

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

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	В	1.8	0.15	ng/L		06/04/19 06:31	06/05/19 03:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.20	JI	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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.8		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

06/04/19 06:31 06/05/19 03:36

06/04/19 06:31 06/05/19 03:36

06/04/19 06:31 06/05/19 03:36

06/04/19 06:31 06/05/19 03:36

06/04/19 06:31 06/05/19 03:36

06/04/19 06:31 06/05/19 03:36

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

50

84

83

91

103

97

6/12/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50812-2

Project/Site: DWGTF_Londonderry 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

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50812-2	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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 = 1802 PFHxS

PFOS = 13C4 PFOS

d3-NMeFOSAA = d3-NMeFOSAA

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

Eurofins TestAmerica, Sacramento

6/12/2019

Lab Sample ID: MB 320-298920/1-A

Matrix: Water

Analysis Batch: 299166

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

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

Client Sample	ID:	Method	Blank
---------------	-----	--------	-------

Prep Type: Total/NA

Prep Batch: 298920

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MB	MB							
Inntana Dilutian	0/ Daggirani	Ovalifian	l impida				Dramarad	A a a a	Dil Coo

	MB	MB				
Isotope Dilution	%Recovery	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
1802 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				Clie	nt Sai	mple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 299166							Prep Batch: 298920
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Eurofins TestAmerica, Sacramento

Page 8 of 17

Lab Sample ID: LCS 320-298920/2-A

Matrix: Water

Analyte

(PFUnA)

(PFDoA)

(PFTriA)

(PFTeA)

(PFBS)

(PFHxS)

(PFHpS)

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

(PFHxDA)

d3-NMeFOSAA

M2-6:2 FTS

M2-8:2 FTS

Analysis Batch: 299166

Perfluoropentanoic acid (PFPeA)

Perfluorohexanoic acid (PFHxA)

Perfluoroheptanoic acid (PFHpA)

Perfluorooctanoic acid (PFOA)

Perfluorononanoic acid (PFNA)

Perfluorodecanoic acid (PFDA)

Perfluoroundecanoic acid

Perfluorododecanoic acid

Perfluorotridecanoic acid

Perfluorotetradecanoic acid

Perfluorobutanesulfonic acid

Perfluorohexanesulfonic acid

Perfluoroheptanesulfonic Acid

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

Spike

Added

40.0

40.0

40.0

40.0

40.0

40.0 40.0

40.0

40.0

40.0

35.4

36.4

38.1

37.1

38.3

40.0

40.9

37.0

40.5

39.0

LCS LCS

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

Client	Sample	ID:	Lab	Cor	ntrol	Samp	le
			_	_		- 4 1/8	

%Rec.

Prep Type: Total/NA Prep Batch: 298920

Result	Qualifier Unit	D	%Rec	Limits	
40.4	ng/L		101	66 - 126	
39.2	ng/L		98	66 - 126	
38.3	ng/L		96	66 - 126	
38.4	ng/L		96	64 - 124	
39.3	ng/L		98	68 - 128	
38.5	ng/L		96	69 - 129	
35.0	ng/L		87	60 - 120	
38.9	ng/L		97	71 - 131	
37.0	ng/L		92	72 - 132	
36.1	ng/L		90	68 - 128	
38.1	ng/L		108	73 - 133	
35.7	ng/L		98	63 - 123	•

107

100

106

97

68 - 128

67 - 127

67 - 127

72 - 132

38.6	37.3	ng/L	97	68 - 128
40.0	40.0	ng/L	100	67 - 127
37.9	41.6	ng/L	110	66 - 126

ng/L

ng/L

ng/L

ng/L

Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFBA	86		50 - 150
13C5 PFPeA	90		50 - 150
13C2 PFHxA	89		50 - 150
12C1 DEUm A	04		EO 150

LCS LCS

91

94

89

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
1802 PFHxS	86	50 - 150
13C4 PFOS	81	50 - 150

50 - 150

50 - 150

50 - 150

Lab Sample ID: LCSD 320-298920/3-A

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

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

Client Sample ID: Lab	Cont	rol San	iple Dup
	Prep	Type:	Total/NA
	_		

Matrix: Water Analysis Batch: 299166	Spike	LCSD	LCSD				Prep Ty Prep Ba %Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

38.3

40.0

38.8

38.8

ng/L

ng/L

101

97

67 - 127

72 - 132

	LCSD	LCS
--	------	-----

8:2 FTS

(PFHxDA)

Perfluoro-n-hexadecanoic acid

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

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QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-2

Project/Site: DWGTF_Londonderry 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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-2 Project/Site: DWGTF_Londonderry SDG: 12 Mont Vernon Dr - Londonderry, NH

Client Sample ID: NOB_051

Lab Sample ID: 320-50812-2

Matrix: Water

Date Collected: 05/21/19 09:45 Date Received: 05/31/19 09:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

uthority NAB	Program DoD		EPA Region	Identification Number	Expiration Date 01-20-21
,	•	ort, but the laboratory	is not certified by the	e governing authority. Thi	is list may include analytes for which
the agency does not of Analysis Method	Prep Method	Matrix	Analyte	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfona IMeFOSAA)	midoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (Pf	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDo	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (F	PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA))
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PF	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	proundecanoic acid (PFUr	nA)

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

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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

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 so.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC N	9.	
CI	lent Contact: erek Bennett	Phone: 603 - 224			E-M		son@te	estamencainc.com		Page:		
Co	ompany	1001 KA-1	4187		One	T.	3011 € 10			Jab #:		
_	ew Hampshire Dept of Environ Services	Due Date Request	lad:			-		Analysis Re	quested	Proco	nution Codes	
29 City	ddress: 9 Hazen Drive	Due Date Request							100 HORADON NOTO	A - HC	vation Codes: M - Hexans	
		TAT Requested (d	lays):				n			B - Na	OH N-None	
100	oncord late, Zip:	Standard TAT					alyte			D - Niti		
	H, 03302	PO#:				41	OAn	320-50812 Chain of (IIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIII	E - Nai F - Me	DH R - Na2S2O3	
	nonei 603) 271-8520	Purchase Orde	r not require	d		6	ist (Judiody		G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydra	
En	mail: erek.bennett⊠ des.nh.gov	W0 #. Pay using 3904					Standard List (2'O'Analytes)	11111	TITIET.	n J-lce	U - Acetone Vater V - MCAA	
Pri	roject Name:	Project #:			_	Sample (Yes or SD (Yes or No)	Stand			Containers C+ED	TA W - pH 4-5	
T.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes (Yes	AS, S			Other:	2 - omer (specify)	
L	ondonderry, NH	addwr.				XI. Incred Sample (MS/MSD (Yes (MOD) PFAS, §				ō		
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sealid, Demaste/bil, BT=Tlasue, A=Air	FE	PFC IDA - (MO			X Total Number	Special Instructions/Note:	
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.	
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.	
	NOB-052	5/21/19	1040	6	SW	M	x			500		
	NOB-053	5/21/19	1100	6	54	W	x			Sia-		
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	- 3	
	NOB-055	5/21/19	1150	é	SW	W	ю			Sw	-4	
	NOB-056	5/21/19	1240	6	Sw	M	×			Sw.	5	
	NOB-057	5/21/19	1320	6	SW	W	×			Sw	-9	
	Field Dlank	5/21/19	1325	6	الا	M	×			Lab	supplied Alak	
P	Possible Hazard Identification					Sa	mple D	isposal (A fee may be	assessed if samples are ret	ained long	er than 1 month)	
D	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	on B - Unkn	own — F	Radiological		Sp	Reti	urn To Client Structions/QC Requireme	Disposal By Lab A	rchive For	Months	
_	mpty Kit Relinquished by:		Date:			Time:		00.1	Method of Shipment:			
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time 5/27/19	141	42 Company NHDES	
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19	14:	Company	
Re	elinquisheg by:	Date/Time:	17.1-		Company		Receive	DOIN COOL	Date/June 5/3//		20 STA-ST	
2	Custody Seals Intact: Custody Seal No.: 7410	-0%					Cooler 1	emperature(s) °C and Other R		, ,	00 1000	
_	containers labeled as "NOB_S4" 1	1	1	^	1		_	./		1 -	Ver: 08/04/2016	

6/12/2019

Page 16 of 17

Job Number: 320-50812-2

SDG Number: 12 Mont Vernon Dr - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported :

06-Jun-19 08:17

REPORT OF ANALYSIS

119052561.02 Londonderry GW Quality Eval., Londonderry, NH, #95160.00

Drinking Water, NOB 051

sampled Date: 21-May-2019 09:45

Nitrate

<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrate-N	1.4	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
Alibeita						
Nitrite						
<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	ma/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

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A Division of Nelson Analytical, LLC

Turnaround Requirements	(check one	<u>,,</u>					-				+											-									
				<u> </u>		_		_		==	+	_					ject	into	orma	atio	n							_			
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	les Need Prior Ame Day Turnard One Day Turnard Iwo Day Turnard Tee Day Turnard Normal Turnard	und und und und	'al	,	Pro ject Tow Sa Con Refe	mpa	ler: iny:	7	ريهان <u>٠</u> اير	e di		100		.(1,	, E	VC	<u> </u>	F	Proj€	ect l Re Inv	Man epo voic Pt E-	age rt To e To none mai	r: [// p: _/_ p: _/ : _/_	lard Fu 03 He	k 0.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	He. He My- erso	n A	1000 1000 12 12	ble	vo 49.	<u> </u>
Sample Informa	ition	_=		٧	OCs			S	voc	s			Pet	trole	um			Ме	tals		٧	Vet (Che	nist	ry / I	Inorg	anio	s		ı	
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Paramater only:		1.1-Luxatile / EUB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1																							_T	ĺ		
telinquished by: telinquished by:	Date/Time: 5/21/19 Date/Time: Date/Time:	15-4	5	Receiv	deceived by:				Receipt Conditions (laboratory use only): Laboratory Supplied Containers (Yes / No Containers Intact/Properly Labeled? Yes / No Were samples delivered on ice (Yes / No					ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo																	
l '		Receipt Temperature:C Does a price quote apply?YesN					_ No ONF¢	RM-	03094	ß																					



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392 Lab ID: 19050392

29 Hazen Drive, PO Box 95

Project Number: **DWGTF Londonderry** Date: 6/24/2019

Concord NH 03302-0

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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 E	Comment: Trip Blank has hit for Toluene but samples all <dl.< td=""></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

Analytical Results

Lab ID:

Date:

19050392

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location: 12 Mont Vernon Dr Londonderry NH

Sample Client Sample Identity	/		Start Date/	Time Sampled:	Ма	ıtrix
19050392-003 NOB_051			5/21/20	019 9:45:00 AM	Drinki	ng water
Parameter	Method	Result MCI	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		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		6/3/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L		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		6/3/2019	0.5	LauraB
		-			Dogg 1 of	2

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
19050392-003	NOB_051				5/21/20	19 9:45:00 AM	Drinki	ng 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		6/3/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 1 ug/L			6/3/2019	1	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/3/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/3/2019	0.5	LauraB
Tetrahydrofurar	ì	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/3/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
,		-						



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.

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

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

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Laboratory Job ID: 320-50330-6 SDG: 25 Sev Severance Dr. - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50330-6

Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

Qualifiers

I C	M.S
LU	

TEF

TEQ

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
1	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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

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 1.0° 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.

Job ID: 320-50330-6

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Detection Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50330-6

Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

Client Sample ID: NOB_045

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.1	В —	1.9	0.33	ng/L		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	В	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	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.3	В	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	JB	9.5	19	na/l	1	FPA 537(Mod)	Total/NA

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Client Sample Results

Client: New Hampshire Dept of Environmental Serv

50

91

87

90

107

106

Job ID: 320-50330-6 Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

Client Sample ID: NOB_045

Lab Sample ID: 320-50330-6

Matrix: Water

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

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.1	В	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	В	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	В	1.9	0.19	ng/L		05/22/19 09:19	06/04/19 13:13	1
Perfluorohexanesulfonic acid (PFHxS)	4.3	В	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-methylperfluorooctanesulfonamidoa cetic 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	JB	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

6/12/2019

05/22/19 09:19 06/04/19 13:13

05/22/19 09:19 06/04/19 13:13

05/22/19 09:19 06/04/19 13:13

05/22/19 09:19 06/04/19 13:13

05/22/19 09:19 06/04/19 13:13

05/22/19 09:19 06/04/19 13:13

50 - 150

50 - 150

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50 - 150

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50330-6

Project/Site: TrustFund_Londonderry 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

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-6	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50330-6

Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance 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
MB MB	•

	IVID	IVID							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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		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	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	1

MB	MB				
%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
86		50 - 150	05/22/19 09:19	05/27/19 21:06	1
96		50 - 150	05/22/19 09:19	05/27/19 21:06	1
89		50 - 150	05/22/19 09:19	05/27/19 21:06	1
90		50 - 150	05/22/19 09:19	05/27/19 21:06	1
96		50 - 150	05/22/19 09:19	05/27/19 21:06	1
96		50 - 150	05/22/19 09:19	05/27/19 21:06	1
95		50 - 150	05/22/19 09:19	05/27/19 21:06	1
99		50 - 150	05/22/19 09:19	05/27/19 21:06	1
95		50 - 150	05/22/19 09:19	05/27/19 21:06	1
82		50 - 150	05/22/19 09:19	05/27/19 21:06	1
88		50 - 150	05/22/19 09:19	05/27/19 21:06	1
51		50 - 150	05/22/19 09:19	05/27/19 21:06	1
87		50 - 150	05/22/19 09:19	05/27/19 21:06	1
91		50 - 150	05/22/19 09:19	05/27/19 21:06	1
78		50 - 150	05/22/19 09:19	05/27/19 21:06	1
79		50 - 150	05/22/19 09:19	05/27/19 21:06	1
95		50 - 150	05/22/19 09:19	05/27/19 21:06	1
	%Recovery 86 96 89 90 96 96 95 82 88 51 87 91 78	### Recovery Qualifier ### Recovery	%Recovery Qualifier Limits 96 50 - 150 89 50 - 150 90 50 - 150 96 50 - 150 96 50 - 150 95 50 - 150 99 50 - 150 82 50 - 150 88 50 - 150 51 50 - 150 87 50 - 150 91 50 - 150 79 50 - 150	%Recovery Qualifier Limits Prepared 86 50 - 150 05/22/19 09:19 96 50 - 150 05/22/19 09:19 89 50 - 150 05/22/19 09:19 90 50 - 150 05/22/19 09:19 96 50 - 150 05/22/19 09:19 95 50 - 150 05/22/19 09:19 99 50 - 150 05/22/19 09:19 95 50 - 150 05/22/19 09:19 82 50 - 150 05/22/19 09:19 88 50 - 150 05/22/19 09:19 88 50 - 150 05/22/19 09:19 87 50 - 150 05/22/19 09:19 91 50 - 150 05/22/19 09:19 78 50 - 150 05/22/19 09:19 79 50 - 150 05/22/19 09:19	%Recovery Qualifier Limits Prepared Analyzed 86 50 - 150 05/22/19 09:19 05/27/19 21:06 96 50 - 150 05/22/19 09:19 05/27/19 21:06 89 50 - 150 05/22/19 09:19 05/27/19 21:06 90 50 - 150 05/22/19 09:19 05/27/19 21:06 96 50 - 150 05/22/19 09:19 05/27/19 21:06 95 50 - 150 05/22/19 09:19 05/27/19 21:06 99 50 - 150 05/22/19 09:19 05/27/19 21:06 95 50 - 150 05/22/19 09:19 05/27/19 21:06 95 50 - 150 05/22/19 09:19 05/27/19 21:06 82 50 - 150 05/22/19 09:19 05/27/19 21:06 88 50 - 150 05/22/19 09:19 05/27/19 21:06 87 50 - 150 05/22/19 09:19 05/27/19 21:06 91 50 - 150 05/22/19 09:19 05/27/19 21:06 91 50 - 150 05/22/19 09:19 05/27/19 21:06 91 50 - 150 05/22/19 09:19

Lab Sample ID: LCS 320-296191/2-

Matrix: Water Analysis Batch: 297184	Spike	ıcs	LCS				Prep Type: Total/NA Prep Batch: 296191 %Rec.
Analyte Perfluorobutanoic acid (PFBA)	Added 40.0	_	Qualifier	Unit ng/L	D	%Rec 113	Limits 70 - 130

Client Sample ID: Lab Control Sample

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QC Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50330-6

Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

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

101

99

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101

93

64

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89

87

84

107

13C2 PFDA

13C2 PFUnA

13C2 PFDoA

13C3 PFBS

13C2 PFTeDA

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Lab Sample ID: LCS 320-2 Matrix: Water Analysis Batch: 297184	96191/2-A					Clie	ent Sar	nple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 29619
			Spike	_	LCS				%Rec.
Analyte			Added		Qualifier	Unit	D	%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			40.0	39.7		ng/L		99	60 - 120
(PFUnA)						Ü			
Perfluorododecanoic acid			40.0	43.3		ng/L		108	71 ₋ 131
(PFDoA)									
Perfluorotridecanoic acid			40.0	45.2		ng/L		113	72 - 132
(PFTriA)									
Perfluorotetradecanoic acid			40.0	36.7		ng/L		92	68 - 128
(PFTeA)			05.4	00.4				400	70 400
Perfluorobutanesulfonic acid			35.4	36.1		ng/L		102	73 - 133
(PFBS)			36.4	34.9		na/l		96	63 - 123
Perfluorohexanesulfonic acid (PFHxS)			30.4	34.9		ng/L		90	03 - 123
Perfluoroheptanesulfonic Acid			38.1	43.4		ng/L		114	68 - 128
(PFHpS)			00.1	70.7		119/1			00 - 120
Perfluorooctanesulfonic acid			37.1	40.1		ng/L		108	67 - 127
(PFOS)						3			
Perfluorodecanesulfonic acid			38.6	40.4		ng/L		105	68 - 128
(PFDS)						-			
N-methylperfluorooctanesulfona			40.0	43.0		ng/L		108	67 - 127
midoacetic acid (NMeFOSAA)									
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			40.0	39.7		ng/L		99	72 - 132
(PFHxDA)									
		LCS							
Isotope Dilution	%Recovery	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						

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QC Sample Results

Client: New Hampshire Dept of Environmental Serv Job ID: 320-50330-6

Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

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

Lab Sample ID: LCSD 320-296191/3-A Matrix: Water			(Client Sa	ample	ID: Lat	Control Prep Ty	pe: Tot	otal/NA				
Analysis Batch: 297184	Spike	I CSD	LCSD				Prep Ba	itcn: 2	RPD				
Analyte	Added	_	Qualifier	Unit	D	%Rec	/intec.	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-methylperfluorooctanesulfona midoacetic 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				

(1.1.1.2.1)	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-6 Project/Site: TrustFund_Londonderry SDG: 25 Sev Severance Dr. - Londonderry, NH

Client Sample ID: NOB_045

Lab Sample ID: 320-50330-6

Matrix: Water

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

uthority NAB	Program DoD		EPA Region	Identification Number	Expiration Date 01-20-21		
VAD	טטט			L2400	01-20-21		
,	•	rt, but the laboratory	is not certified by the	e governing authority. This	list may include analytes for whic		
the agency does not of Analysis Method	Prep Method	Matrix	Analyte	<u> </u>			
EPA 537(Mod)	3535	Water	6:2 FT				
EPA 537(Mod)	3535	Water	8:2 FT				
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfonan	nidoacetic		
EPA 537(Mod)	3535	Water	`	lMeFOSAA) probutanesulfonic acid (PF	BS)		
EPA 537(Mod)	3535	Water		probutanoic acid (PFBA)			
EPA 537(Mod)	3535	Water		prodecanesulfonic acid (PF	DS)		
EPA 537(Mod)	3535	Water		prodecanoic acid (PFDA)	-,		
EPA 537(Mod)	3535	Water		prododecanoic acid (PFDo	A)		
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (P	FHpS)		
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA)	, ,		
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)		
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)	·		
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (F	PFHxDA)		
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)			
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PF	OS)		
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)			
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA)			
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PFT	eA)		
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)				
EPA 537(Mod)	3535	Water	Perfluc	proundecanoic acid (PFUn	A)		

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry 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

Job ID: 320-50330-6

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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway

West Sacramento, CA 95605

4604 5366 1238

4604 3566

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

Client Information	Sampler	Kerlss	on		PM: nnson, (Orlette	s	Carrier Tracking No(s):		COC No:	
Client Contact: Derek Bennett	Phone			100	fail: ette inhi	nson@	testamericainc.com			Page:	
Company:	-			10		100110		Descripted		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Reques	ted:	_		1		Analysis	Requested		Preservation Co	odes:
29 Hazen Drive					JI					A-HCL	M - Hexane
City: Concord	TAT Requested (c	iays);			71	8				B-NaOH	N - None
State, Zip:	Standard TAT					(ST Analytes)		111111		C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302					41	# An	0/30	111111		E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	d		2		9/0//			G - Amchior H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydra
Email:	WO#:	1			٦ž ۾	Standard List	4			I - Ice J - DI Water	U - Acetone V - MCAA
derek.bennett@des.nh.gov Project Name:	Pay using 3904 Project #:				Yes or	tand			containers	K-EDTA	W - pH 4-5
TrustFund_Londonderry /					les (18, 8			ntai	L - EDA	Z - other (specify)
Site: Londonderry, NH	SSOW#:				Samp SD ((MOD) PFAS,			05 10		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewster, Sesolid, Oswaste/oil, BT=Tissue, AsAi	Field Filtered Sample (Perform MS/MSD (Yes	PFC_IDA - (MOC			Total Number	Special I	nstructions/Note:
		> <		ation Code:	X				X		
MTBE -1120	5/9/19	0530	6	DW	W	X					
Field Deplicate Mant	5/9/19	0853	6	DW	4	×					
NOS-044 15Tyle RD Landonkery, NH	5/9/19	0925	6	DW	N	×					
MTBE _ 1123	5/19	1015	6	DW	N	k					
MTBE-1115	5/9/19	1035	6	DW	U	X					
NOB-045,25 Severance of handy lety At	5/9/19	1415	6	DW	M	λ		320-50330 Chain of 0	Custody		
TNK-DW-4	579/19	1145	6	Du	4	x		1 1 1 1 1 1			
NOR- 1916 Warst Landonderry . NH	519/19	1240	6	DW	N	K					
NOB-045,25 Exercince on howevery, No TNIC-DW-4 NOB-046, Illivest, Lowenderry, NH HTBE-1118	5/9/19	1345	6	سلا	N	X					
Possible Hazard Identification					Sa	mple	Disposal (A fee may	be assessed if samples	s are retain	ed longer than 1	month)
Non-Hazard Flammable Skin Irritant Poisc	on B Unkni	own \square_F	adiological		1	\square_{Re}	turn To Client	Disposal By Lab		ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)					Sp	ecial li	structions/QC Requir	ements:			
Empty Kit Relinquished by:		Date:			Time:			Method of Snipme	nt		
Figure 1997	Sto/19	0815		Company .	(Regell	DEA	- 5.4° Date/	19/201	9 0919	NHDES
Hetinguishad by:	5/14/19	1322		Company	24	Hosel S	Doing Coole	Date of	me:1 /14/19	1320	Company WHDE
Remausned w:	Date/Time:	1 700		Company		Receiv	ed by:	Date/#			Company
Custody Seals Intact: Custody Seal No.: 30 612						Coller	Temperature(s) C and Ot	has Demades			
MYes A No 30012								1.0	9K-8		-

Containers requiring zero headspace have no headspace or bubble is

If necessary, staff have been informed of any short hold time or quick TAT

Job Number: 320-50330-6

SDG Number: 25 Sev Severance Dr. - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 50330

List Number: 1

MS/MSDs

needs

<6mm (1/4").

Creator: Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	True	

True

True

True

N/A

Eurofins TestAmerica, Sacramento

Multiphasic samples are not present.

Samples do not require splitting or compositing.



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

NELSON ANALYTICAL LAB



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

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

Date Reported:

17-May-19 11:25

REPORT OF ANALYSIS 119051162.05

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 Drinking Water, NOB_045, 25 Severance Dr, Londonderry, NH

sampled Date: 09-May-2019 11:15

Nitrate

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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"



NHDES MtBE Remediation Bureau

Derek S. Bennett Control #: 19050245 Lab ID: 19050245 29 Hazen Drive, PO Box 95 Project Number: TrustFund Londonderry Date: 6/10/2019

Concord NH 03302-0 Project Name: MTBE_01

Project Location: 25 Severance Dr Londonderry NH

Sample Client Sample Identity	/			Start Date/T	ime Sampled:	Ma	trix
19050245-006 NOB_045				5/9/201	9 11:15:00 AM	Drinki	ng water
					Date/Time		
Parameter	Method	Result	MCL	Qualifier	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
		- y -					

Page 1 of 3



Sample	Client Sample Ide	entity			Start Date/T	ime Sampled:	Ма	atrix
19050245-006	NOB_045				5/9/201	9 11:15:00 AM	Drinki	ng 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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	diene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	ride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichl		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
Trichlorofluoron	nethane	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



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:

🔅 eurofins

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

Irlette J. Gohasort

Authorized for release by: 8/1/2019 10:03:14 AM

Orlette Johnson, Senior Project Manager (484)685-0864

orlette.johnson@testamericainc.com

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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.

Laboratory Job ID: 320-50330-9 SDG: 95 Mammoth Rd. - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

Qualifiers

LCMS

Qualifier **Qualifier Description**

В Compound was found in the blank and sample.

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

Decision Level Concentration (Radiochemistry) DLC

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) Limit of Quantitation (DoD/DOE) LOQ

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)

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Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-9 Project/Site: TrustFund Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

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.

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 1.0° C.

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

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry 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	В	1.9	0.33	ng/L		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	В	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	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.3	В	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	na/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	7.2	В	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	В	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	В	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:50	1
Perfluorohexanesulfonic acid (PFHxS)	6.3	В	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-methylperfluorooctanesulfonamidoa cetic 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
1802 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					05/27/19 22:50	1
M2-8:2 FTS	105		50 ₋ 150					05/27/19 22:50	1

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

				ent Isotope		• `	-	•	
		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)
320-50330-9	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Eurofins TestAmerica, Sacramento

Lab Sample ID: MB 320-296191/1-A

Matrix: Water

Analysis Batch: 297184

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

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

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 296191

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	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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							Prep Type: Total/NA
Analysis Batch: 297184							Prep Batch: 296191
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 297184

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

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

Client Sample	ID:	Lab	Control	Sample
		D	. 	T - 4 - 1/N A

Prep Type: Total/NA Prep Batch: 296191

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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	40.0	39.7		ng/L		99	72 - 132	

	LCS	LCS	
Isotope Dilution	%Recovery	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

Eurofins TestAmerica, Sacramento

Lab Sample ID: LCSD 320-296191/3-A

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Drop Botch, 200404

Matrix: Water Analysis Batch: 297184	Spike	I CSD	LCSD				Prep Ty Prep Ba %Rec.		
Analyte	Added	_	Qualifier	Unit	D	%Rec	Limits	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	40.0	41.3		ng/L		103	60 - 120	4	30
(PFUnA)	40.0	40.4				404	74 404	_	
Perfluorododecanoic acid	40.0	40.4		ng/L		101	71 - 131	7	30
(PFDoA) Perfluorotridecanoic acid	40.0	41.1		ng/L		103	72 - 132	9	30
(PFTriA)	40.0	71.1		ng/L		100	72-102	Ū	00
Perfluorotetradecanoic acid	40.0	35.6		ng/L		89	68 - 128	3	30
(PFTeA)				-					
Perfluorobutanesulfonic acid (PFBS)	35.4	36.5		ng/L		103	73 ₋ 133	1	30
Perfluorohexanesulfonic acid	36.4	33.6		ng/L		92	63 - 123	4	30
(PFHxS)									
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	38.6	39.7		ng/L		103	68 - 128	2	30
(PFDS)									
N-methylperfluorooctanesulfona midoacetic 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	40.0	38.4		ng/L		96	72 - 132	3	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

(PFHxDA)

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry 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

Job ID: 320-50330-9 Project/Site: TrustFund_Londonderry SDG: 95 Mammoth Rd. - Londonderry, NH

Client Sample ID: MTBE_1118

Date Received: 05/15/19 09:30

Lab Sample ID: 320-50330-9 Date Collected: 05/09/19 13:45

Matrix: Water

Batch **Batch** Dil Initial Final **Batch** Prepared Method Factor **Prep Type** Type Run **Amount Amount** Number or Analyzed Analyst Lab 296191 Total/NA Prep 3535 266.5 mL 10.00 mL 05/22/19 09:19 SK TAL SAC Total/NA 05/27/19 22:50 P1N TAL SAC Analysis EPA 537(Mod) 297184 1

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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

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

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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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway West Sacramento, CA 95605 4604 5366 1238

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Chain of Custody Record

Client Information	Karl .	Karlss	on	1.000	nson, C	Orlette S		Carrier Tracking No(s):		GOG No:
Client Contact: Derek Bennett	Phone:			E-Ma orle		son@tes	tamericains.com			Page:
Company: New Hampshire Dept of Environ Services	**		-				Analysi	s Requested		Job #:
Address 29 Hazen Drive	Due Date Reques	ted:		_	T		Anarysi	S ricquesieu		Preservation Codes:
City:	TAT Requested (d	days):			1		1 1 1 1			A - HCL M - Hexane B - NaOH N - None
Concord State, Zip:	Standard TAT					lytes)				C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
NH, 03302						A O	(30)			E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	ed		9	is of	07/			G - Amchior S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydra
Email: derek.bennett@des.nh.gov	WO #: Pay using 3904	1			or No)	lard			s	I - Ice U - Acetone
Project Name: TrustFund_Londonderry	Project #:				(Yes or	(MOD) PFAS, Standard List (at Analytes)			containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Site	SSOW#:				ered Sample (MS/MSD (Yes	FAS,		111111	cont	Other:
Londonderry, NH		1		- Andr	d Sa	(00			er of	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wawater, Sasolid, Dawaste/oil, BT-Tissue, AsAir)	Field Filtere Perform MS				Total Number	Special Instructions/Note:
ourific racrimination				ation Code:	XX				X	Special management and
MTBE -1120	5/9/19	0530	6	DW	W	K				
Field Deplicate Mark	5/9/19	0853	6	DW	N	×				
MOR-044, 15Tyle RD, Landenberry, NH MTBE - 1123	5/9/19	0925	6	DW	N	×		1 1 1 1 1 1 1		l'
MTBE _ 1123	5/1/19	1015	6	DW	N	k				
MTBE-115	5/9/19	1035	6	DW	N	X				
NOB-045,25 Severance of hand where M	5/9/19	1415	6	DW	M	λ		320-50330 Chain of Cust	odv	
NOB-045,25 Severance of howevery M	5/9/19	1145	6	Du	4	x				
NOB- ME Muest Landonderry, NH	5/1/19	1240	6	DW	N	K				
NOB-016, Illivest, Lowenderry, NH HTBE-1118	5/9/19	1345	6	سد	W	X				
			1							
Possible Hazard Identification					Sai	mple Dis	posal (A fee ma	y be assessed if samples are	retaine	ed longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own F	Radiological		Sne	Return	n To Client uctions/QC Requi	Disposal By Lab	- Archi	ive For Months
Empty Kit Relinquished by:		Date:			Time:	scial man	dollons/QO (requi	Method of Snipment		
Relinquished by:	Date/Time;			Company .	Time.	Regeived to		Date/Time:		Company
for to	5/10/19 Date/Time:	0815		Ver313	-	1	DKI	- 5.4 C 5/9	1201	
Retinquished by:	5/14/19	132)	N HOE	3	Ship	Ding Cools	4.1 4.5/14	119	
Remaushed by:	Date/Time:			Company		Received	ime Bo	Sas Date/Time	110	930 ETALLE
Custody Seals Intact: Custody Seal No.: 30 612						Comer Ten	nperature(s) C and O	the Demade	-8	

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Job Number: 320-50330-9

SDG Number: 95 Mammoth Rd. - Londonderry, NH List Source: Eurofins TestAmerica, Sacramento

Login Number: 50330

List Number: 1

Creator: Her, David A

Oreator. Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

N/A

Samples do not require splitting or compositing.



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

NELSON ANALYTICAL LAB



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

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

Date Reported:

17-May-19 11:25

REPORT OF ANALYSIS

119051162.08

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 Drinking Water, MTBE_1118

sampled Date: 09-May-2019 01:15

Nitrate

<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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"



NHDES MtBE Remediation Bureau

Analytical Results

Lab ID:

Derek S. Bennett

Control #: 19050245

19050245

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

Date: 6/10/2019

Concord NH 03302-0

Project Name: MTBE_01

Project Location:

Sample	Client Sample Identity				Start Date/T	ime Sampled:	Ма	ntrix
19050245-009	MTBE_1118				5/9/201	9 1:45:00 PM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,1-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trichlorob	penzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB
2,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Chlorotoluene	Э	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Ethoxy-2-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB
2-Methyl-2-Prop	oanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
4-Chlorotoluene	е	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
4-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Bromodichloror	nethane	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 Disulfid	e	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Carbon Tetrach	nloride	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
			-			,	1 6	2

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Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloron	nethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Isopropylbenzei	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ket	tone (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-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofuran	1	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



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.



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

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-50330-4 SDG: 17 Wilshire Dr. - Londonderry, NH

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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

1.7		N/A	0
ш	J	IVI	J

RPD

TEF

TEQ

Qualifier	Qualifier Description
В	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 17 Wilshire Dr. - Londonderry, NH

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 1.0° 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.

Job ID: 320-50330-4

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry 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	В —	1.9	0.33	ng/L		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	В	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	JB	1.9	0.27	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	7.1	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.6	JB	1.9	0.16	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	JI	1.9	0.51	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry SDG: 17 Wilshire Dr. - Londonderry, NH

Client Sample ID: MTBE_1123

Lab Sample ID: 320-50330-4 Date Collected: 05/09/19 10:15 **Matrix: Water** Date Received: 05/15/19 09:30

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	2.7	В	1.9	0.33	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluoropentanoic acid (PFPeA)	3.0		1.9	0.46	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorohexanoic acid (PFHxA)	4.3		1.9	0.55	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluoroheptanoic acid (PFHpA)	2.5	В	1.9	0.24	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorooctanoic acid (PFOA)	9.2		1.9	0.80	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorotetradecanoic acid (PFTeA)	0.27	JB	1.9	0.27	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorobutanesulfonic acid (PFBS)	7.1	В	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorohexanesulfonic acid (PFHxS)	1.6	JB	1.9	0.16	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorooctanesulfonic acid	1.2	JI	1.9	0.51	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		05/22/19 09:19	05/27/19 21:54	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		05/22/19 09:19	05/27/19 21:54	
6:2 FTS `	ND		9.5	1.9	ng/L		05/22/19 09:19	05/27/19 21:54	
8:2 FTS	ND		1.9	0.35	ng/L		05/22/19 09:19	05/27/19 21:54	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.84	ng/L		05/22/19 09:19	05/27/19 21:54	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	86		50 - 150				05/22/19 09:19	05/27/19 21:54	
13C5 PFPeA	94		50 - 150				05/22/19 09:19	05/27/19 21:54	
13C2 PFHxA	94		50 ₋ 150				05/22/19 09:19	05/27/19 21:54	
13C4 PFHpA	92		50 - 150				05/22/19 09:19	05/27/19 21:54	
13C4 PFOA	97		50 ₋ 150				05/22/19 09:19	05/27/19 21:54	
13C5 PFNA	101		50 ₋ 150				05/22/19 09:19	05/27/19 21:54	
13C2 PFDA	103		50 - 150				05/22/19 09:19	05/27/19 21:54	
13C2 PFUnA	98		50 ₋ 150				05/22/19 09:19	05/27/19 21:54	
13C2 PFDoA	100		50 - 150				05/22/19 09:19	05/27/19 21:54	
3C2 PFTeDA	95		50 - 150				05/22/19 09:19	05/27/19 21:54	
13C3 PFBS	97		50 - 150					05/27/19 21:54	
13C2 PFHxDA	68		50 ₋ 150				05/22/19 09:19	05/27/19 21:54	
1802 PFHxS	91		50 - 150					05/27/19 21:54	
13C4 PFOS	98		50 - 150					05/27/19 21:54	
d3-NMeFOSAA	86		50 - 150					05/27/19 21:54	
M2-6:2 FTS	83		50 - 150					05/27/19 21:54	
M2-8:2 FTS	102		50 ₋ 150					05/27/19 21:54	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry SDG: 17 Wilshire Dr. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-4	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry 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 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 297184 Prep Batch: 296191**

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB N	ИB				
Isotope Dilution %	%Recovery (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
1802 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							Prep Type: Total/NA Prep Batch: 296191
•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Eurofins TestAmerica, Sacramento

6/12/2019

Client Sample ID: Lab Control Sample

Page 8 of 17

Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

Analysis Batch: 297184

Perfluoro-n-hexadecanoic acid

(PFHxDA)

M2-8:2 FTS

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry SDG: 17 Wilshire Dr. - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 296191

	Spike	LCS	LCS		%Rec.	
Analyte	Added	Result	Qualifier Unit	D %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-methylperfluorooctanesulfona midoacetic 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	

40.0

39.7

ng/L

Isotope Dilution	%Recovery	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
1802 PFHxS	90		50 - 150
13C4 PFOS	89		50 - 150
d3-NMeFOSAA	87		50 - 150
M2-6:2 FTS	84		50 - 150

LCS LCS

107

6/12/2019

72 - 132

50 - 150

Lab Sample ID: LCSD 320-296191/3-A

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry SDG: 17 Wilshire Dr. - Londonderry, NH

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

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

Matrix: Water Analysis Batch: 297184	Spike	LCSD		•		Prep Type: Total/NA Prep Batch: 296191 %Rec. RPD			
Analyte	Added	_	Qualifier	Unit	D	%Rec	Limits	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	40.0	41.3		ng/L		103	60 - 120	4	30
(PFUnA)	40.0	40.4				404	74 404	_	
Perfluorododecanoic acid	40.0	40.4		ng/L		101	71 - 131	7	30
(PFDoA) Perfluorotridecanoic acid	40.0	41.1		ng/L		103	72 - 132	9	30
(PFTriA)	40.0	71.1		ng/L		100	72-102	Ū	00
Perfluorotetradecanoic acid	40.0	35.6		ng/L		89	68 - 128	3	30
(PFTeA)				-					
Perfluorobutanesulfonic acid (PFBS)	35.4	36.5		ng/L		103	73 ₋ 133	1	30
Perfluorohexanesulfonic acid	36.4	33.6		ng/L		92	63 - 123	4	30
(PFHxS)									
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	38.6	39.7		ng/L		103	68 - 128	2	30
(PFDS)									
N-methylperfluorooctanesulfona midoacetic 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	40.0	38.4		ng/L		96	72 - 132	3	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

(PFHxDA)

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry SDG: 17 Wilshire Dr. - Londonderry, NH

LCMS

Prep Batch: 296191

Lab S	ample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-5	0330-4	MTBE_1123	Total/NA	Water	3535	
MB 32	20-296191/1-A	Method Blank	Total/NA	Water	3535	
LCS 3	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

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

uthority	Program		EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	rt, but the laboratory	y is not certified by the	e governing authority. This	list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfonan NMeFOSAA)	nidoacetic
EPA 537(Mod)	3535	Water	,	probutanesulfonic acid (PFI	BS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (PF	DS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDo	A)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (P	FHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)	
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (F	PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PF	OS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFPeA)	
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFT	eA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTriA	.)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFUn	۹)

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

Job ID: 320-50330-4 Project/Site: TrustFund_Londonderry 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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway

West Sacramento, CA 95605

4604 5366 1238

4604 3566

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

Client Information	Sampler	Kerlss	on		PM: nnson, (Orlette	s	Carrier Tracking No(s):		COC No:	
Client Contact: Derek Bennett	Phone			100	fail: ette inhi	nson@	testamericainc.com			Page:	
Company:	-			10.11		100110		Descripted		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Reques	ted:	-		1		Analysis	Requested		Preservation Co	odes:
29 Hazen Drive					JI					A-HCL	M - Hexane
City: Concord	TAT Requested (c	iays);			71	8				B-NaOH	N - None
State, Zip:	Standard TAT					(ST Analytes)		111111		C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302					41	# An	0/30	111111		E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	d		2		9/0//			G - Amchior H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydra
Email:	WO#:	1			٦ž ۾	Standard List	4			I - Ice J - DI Water	U - Acetone V - MCAA
derek.bennett@des.nh.gov Project Name:	Pay using 3904 Project #:		_		Yes or	tand			containers	K-EDTA	W - pH 4-5
TrustFund_Londonderry /					les (18, 8			ntai	L - EDA	Z - other (specify)
Site: Londonderry, NH	SSOW#:				Samp SD ((MOD) PFAS,			05 10		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewster, Sesolid, Oswaste/oil, BT=Tissue, AsAi	Field Filtered Sample (Perform MS/MSD (Yes	PFC_IDA - (MOC			Total Number	Special I	nstructions/Note:
		> <		ation Code:	X				X		
MTBE -1120	5/9/19	0530	6	DW	W	X					
Field Deplicate Mant	5/9/19	0853	6	DW	4	×					
NOS-044 15Tyler RD Landonkers, NH	5/9/19	0925	6	DW	N	×		0.0000000000000000000000000000000000000			
MTBE _ 1123	5/19	1015	6	DW	N	k					
MTBE-1115	5/9/19	1035	6	DW	U	X					
NOB-045,25 Severance of handy lety At	5/9/19	1415	6	DW	M	λ		320-50330 Chain of 0	Custody		
TNK-DW-4	579/19	1145	6	Du	4	x		1 1 1 1 1 1			
NOR- 1916 Warst Landonderry . NH	519/19	1240	6	DW	N	K					
NOB-045,25 Exercince on howevery, No TNIC-DW-4 NOB-046, Illivest, Lowenderry, NH HTBE-1118	5/9/19	1345	6	سلا	N	X					
Possible Hazard Identification					Sa	mple	Disposal (A fee may	be assessed if samples	s are retain	ed longer than 1	month)
Non-Hazard Flammable Skin Irritant Poisc	on B Unkni	own \square_F	adiological		1	\square_{Re}	turn To Client	Disposal By Lab		ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)					Sp	ecial li	structions/QC Requir	ements:			
Empty Kit Relinquished by:		Date:			Time:			Method of Snipme	nt		
Figure 1997	Sto/19	0815		Company .	(Regell	DEA	- 5.4° Date/	19/201	9 0919	NHDES
Hetinguishad by:	5/14/19	1322		Company	24	Hosel S	Doing Coole	Date of	me:1 /14/19	1325	Company WHDE
Remausned w:	Date/Time:	1 700		Company		Receiv	ed by:	Date/#			Company
Custody Seals Intact: Custody Seal No.: 30 612						Coller	Temperature(s) C and Ot	has Demades			
MYes A No 30012								1.0	9K-8		-

Job Number: 320-50330-4

SDG Number: 17 Wilshire Dr. - Londonderry, NH

Login Number: 50330 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her. David A

Creator: Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

NELSON ANALYTICAL LAB



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

NH ELAP Accreditation #NH1005 Maine State Certification #NH01005 Vermont State Certification #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	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	Reporting Limit	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrite-N	<0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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

Analytical Results

Lab ID:

Date:

Derek S. Bennett

Control #: 19050245

19050245

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

6/10/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location:

Sample Client Sample Identity	/			Start Date/T	ime Sampled:	Ма	trix
19050245-004 MTBE_1123				5/9/201	9 10:15:00 AM	Drinki	ng water
					Date/Time		
Parameter	Method	Result M	ICL	Qualifier	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	00		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	00		5/17/2019	0.5	LauraB
Bromoform	EPA 524.2	< 0.5 ug/L	00		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	•	5		5/17/2019	0.5	LauraB
Chlorobenzene	EPA 524.2	_	00		5/17/2019	0.5	LauraB
		•				-	

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
19050245-004	MTBE_1123	•				9 10:15:00 AM	Drinki	ng 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-Dichloro	pethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Isopropylbenze	ne	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 Chlo	ride	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	e	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofurar	า	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	otal Xylenes EPA 524.2 < 0.5 ug/L		10000	00 5/17/2019		0.5	LauraB	
Trans-1,2-Dichl	Frans-1,2-Dichloroethene EPA 524.2 < 0.5 ug/L		< 0.5 ug/L	100	00 5/17/2019		0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.

Environment Testing TestAmerica

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

LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.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.

10

12

14

15

Laboratory Job ID: 320-50559-3 SDG: 17 Wimbledon Dr - Londonderry, NH

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12

IC

Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

Qualifiers

		N A	0
ш	C	IVI	J

RL

RPD

TEF

TEQ

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.	

J	Result is less than the RE but greater than or equal to the MDE and the concentration is an approximate value.
Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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)

Eurofins TestAmerica, Sacramento

6/12/2019

Page 3 of 17

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

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 1.6° 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.

Job ID: 320-50559-3

1

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6

9

11

4.0

14

15

Detection Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

Client Sample ID: NOB_049

6:2 FTS

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.3	2.0	0.34	ng/L		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 JB	2.0	0.17	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2 JI	2.0	0.53	ng/L	1	EPA 537(Mod)	Total/NA

9.8

2.0 ng/L

17

Job ID: 320-50559-3

Lab Sample ID: 320-50559-3

EPA 537(Mod)

Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

Client Sample ID: NOB_049

Lab Sample ID: 320-50559-3

Date Collected: 05/15/19 10:45 **Matrix: Water** Date Received: 05/22/19 09:30

Analyte	Result Qualifier	RL	MDL		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	-		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 JB	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 JI	2.0	0.53			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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	2.0		ng/L		05/29/19 06:30	05/31/19 02:34	1
6:2 FTS	17	9.8		ng/L		05/29/19 06:30	05/31/19 02:34	1
8:2 FTS	ND	2.0	0.37	-			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
1802 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
WE 0:21 10	00	00 - 700						-

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry 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)								
		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)	
320-50559-3	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	
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)		
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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	
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)		
		M282FTS								
Lab Sample ID	Client Sample ID	(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								

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

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Job ID: 320-50559-3 Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

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

Lab Sample ID: MB 320-297630/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 298173 Prep Batch: 297630**

	MB MB							
Analyte	Result 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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/NA Prep Batch: 297630
Analysis Batch. 230173	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		100	70 - 130

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Client Sample ID: Lab Control Sample

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Lab Sample ID: LCS 320-297630/2-A

Matrix: Water

(PFHxDA)

Isotono Dilution

Analysis Batch: 298173

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

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

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

Prep Batch: 297630

Analysis Batch: 200170	Spike	LCS L	cs		%Rec.
Analyte	Added	Result Q		D %Rec	Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.3	ng/L		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-methylperfluorooctanesulfona midoacetic 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	40.0	37.4	ng/L	94	72 - 132

LCS	LCS	
%Recovery	Qualifier	Limits
90		50 - 15
0.0		F0 45

isotope Dilution	%Recovery	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
1802 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

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

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

		(Client Sa	ample	ID: Lab	Prep Ty	pe: Tot	al/NA
Spike	LCSD	LCSD				%Rec.		RPD
Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
40.0	41.5		ng/L		104	70 - 130	3	30
40.0	38.8		ng/L		97	66 - 126	1	30
40.0	37.8		ng/L		94	66 - 126	4	30
40.0	40.7		ng/L		102	66 - 126	8	30
40.0	42.1		ng/L		105	64 - 124	1	30
40.0	39.0		ng/L		97	68 - 128	2	30
40.0	40.8		ng/L		102	69 - 129	4	30
40.0	38.8		ng/L		97	60 - 120	3	30
40.0	39.6		ng/L		99	71 - 131	2	30
						70. 400		
40.0	42.6		ng/L		106	72 - 132	2	30
40.0	34 9		na/l		87	68 128	1	30
40.0	04.0		iig/L		07	00 - 120		00
35.4	37.5		ng/L		106	73 - 133	5	30
			-					
36.4	35.5		ng/L		98	63 - 123	10	30
							_	
38.1	40.1		ng/L		105	68 - 128	0	30
37 1	35.8		na/l		97	67 127	6	30
37.1	33.0		rig/L		31	07 - 127	O	30
38.6	37.6		ng/L		97	68 - 128	4	30
			-					
40.0	40.7		ng/L		102	67 - 127	5	30
	40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 35.4 36.4 38.1 37.1	Added Result 40.0 41.5 40.0 38.8 40.0 40.7 40.0 42.1 40.0 39.0 40.0 38.8 40.0 39.6 40.0 34.9 35.4 37.5 36.4 35.5 38.1 40.1 37.1 35.8 38.6 37.6	Spike Added LCSD Result Qualifier 40.0 41.5 40.0 38.8 40.0 40.7 40.0 42.1 40.0 39.0 40.0 40.8 40.0 39.6 40.0 39.6 40.0 34.9 35.4 37.5 36.4 35.5 38.1 40.1 37.1 35.8 38.6 37.6	Spike Added LCSD Result Page 1 Qualifier Qualifier Qualifier Unit Qualifier 40.0 41.5 ng/L ng/L ng/L ng/L ng/L ng/L ng/L ng/L	Spike Added LCSD Result Qualifier Qualifier Unit Description Description 40.0 41.5 ng/L ng/L ng/L ng/L ng/L ng/L ng/L ng/L	Spike Added Added LCSD LCSD Qualifier Unit Dg/L D %Rec 104 40.0 41.5 ng/L 104 40.0 38.8 ng/L 97 40.0 37.8 ng/L 94 40.0 40.7 ng/L 102 40.0 42.1 ng/L 105 40.0 39.0 ng/L 97 40.0 39.0 ng/L 97 40.0 38.8 ng/L 97 40.0 38.8 ng/L 97 40.0 39.6 ng/L 99 40.0 34.9 ng/L 106 40.0 34.9 ng/L 87 35.4 37.5 ng/L 98 38.1 40.1 ng/L 98 38.1 40.1 ng/L 97 38.6 37.6 ng/L 97	Spike LCSD LCSD WRec. Limits 40.0 41.5 ng/L 104 70-130 40.0 38.8 ng/L 97 66-126 40.0 37.8 ng/L 94 66-126 40.0 40.7 ng/L 102 66-126 40.0 42.1 ng/L 105 64-124 40.0 39.0 ng/L 97 68-128 40.0 40.8 ng/L 102 69-129 40.0 38.8 ng/L 97 60-120 40.0 38.8 ng/L 97 60-120 40.0 38.8 ng/L 97 60-120 40.0 39.6 ng/L 99 71-131 40.0 34.9 ng/L 87 68-128 35.4 37.5 ng/L 87 68-128 36.4 35.5 ng/L 98 63-123 38.1 40.1 ng/L 97	Added Result Qualifier Unit up. D %Rec up. Limits limits (RPD) 40.0 41.5 ng/L 104 70 - 130 3 40.0 38.8 ng/L 97 66 - 126 1 40.0 37.8 ng/L 94 66 - 126 4 40.0 37.8 ng/L 94 66 - 126 4 40.0 40.7 ng/L 102 66 - 126 8 40.0 42.1 ng/L 105 64 - 124 1 40.0 39.0 ng/L 97 68 - 128 2 40.0 40.8 ng/L 102 69 - 129 4 40.0 38.8 ng/L 97 60 - 120 3 40.0 39.6 ng/L 99 71 - 131 2 40.0 42.6 ng/L 106 72 - 132 2 40.0 34.9 ng/L 87 68 - 128 1 35.4 37.5 ng/L 98 63 - 123 10 38.1 40.1 ng/L 97 67 - 127 6

37.9

38.3

40.0

38.0

39.4

36.9

ng/L

ng/L

ng/L

100

103

92

66 - 126

67 - 127

72 - 132

5

30

30

30

midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

6:2 FTS

8:2 FTS

(PFHxDA)

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry 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

Job ID: 320-50559-3 Project/Site: DWGTF Londonderry SDG: 17 Wimbledon Dr - Londonderry, NH

Client Sample ID: NOB_049

Lab Sample ID: 320-50559-3

Matrix: Water

Date Collected: 05/15/19 10:45 Date Received: 05/22/19 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

uthority	Progran	1	EPA Region	Identification Number	Expiration Date		
NAB	DoD			L2468	01-20-21		
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. Thi	s list may include analytes for which		
Analysis Method	Prep Method	Matrix	Analyt	е			
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	Perfluc	prooctanesulfonic acid (PF	FOS)		
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	Perfluc	oroundecanoic acid (PFUr	nA)		

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: DWGTF Londonderry 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

Job ID: 320-50559-3

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	

880 Riverside Parkway West Sacramento, CA 95605 **Chain of Custody Record**

THE LEADER IN ENVIRONMENTAL TESTING

Phone (916) 737-5600 Fax (916) 372-1059											THE LEADER IN ENVIRONMENTAL TESTING
Client Information	Sampler:	Kenes	NOW.		b PM: bhnso	n, O	riette S		Carner Tracking No(s):		COC No:
Client Contact: Derek Bennett	Phone: 607 - 224				Mail: lette.j	johns	son@testa	americainc.com			Page: \ of
Company: New Hampshire Dept of Environ Services					T			Analysis R	Requested		Job #
Address:	Due Date Request	ed:					1 1				Preservation Codes:
29 Hazen Drive City:	TAT Requested (d	ays):	_		+				11111	1 1 7	A - HCL M - Hexane B - NaOH N - None
Concord							ytes)		11111		C - Zn Acetete O - AsNaO2 D - Nitric Acid P - Na2O4S
State, Zip: NH, 03302	Standard TAT				10		Anal		1 1 1 1 1 1	1 18	E - NaHSO4 Q - Na2SO3
Phone: (603) 271-8520	Po #: Purchase Orde	r not require	ed		7		Standard List (21 Analytes)		11111		F - MeOH R - Na2S2O3 G - Amchlor S - H2SC4 H - Ascorbic Acid T - TSP Dodecahydrate
Email:	WO#: Pay using 3904				Or N	6	ard L				I - Ice U - Acetone J - DI Water V - MCAA
derek,bennett@des.nh.qov Project Name:	Project #:				Yes	N ro	Stand	1010 4 4 4		iners	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
TrustFund_Londonderry Site:	SSOW#:				ble ((Yes				containe	Other:
Londonderry, NH	330***				Sam	USD (O) PF			of	OME:
Sample Identification	Sample Date	Sample Time		Matrix (W-water, S-solid O-waste/oil BT=Tissue, Ass	Field Filte	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) PFAS,			Total Number	Special Instructions/Note:
	><	><	Preserva	ation Code	X	X				IX	
NOB-047, 34 Rolling, Sycril, Evade Lorg, NH	5/15/19	0915	6	Dis	1		K			2	
NOB 048, 28 Hazolas Han, Lendondory, WH	5/15/19	1015	6	Du	N		*			2	
NOB-049, 17Winds I day Dr. Londonberry, NH	5/15/19	1045	6	Dev	N		x			2	
NOB-047, 3772 Ming i Agend bunde brig. NA NOB-048, 28 Hetelas than, beadonderry, NA NOB-049, 17Windelder Dr. Landonderry, NA NOB-050, 2 Fayely, Landonderry, NA	5/15/19	1/35	6	De	U		X			1	
					1				++ 'minimi	1800000	IIII Director
									320-50550		
									320-50559	Chain of C	Ustodi:
	+					Н			1111	N	actody
					+	H					
Possible Hazard Identification						Sar	nole Disc	oosal (A fee may be	e assessed if samples	are retaine	d longer than 1 month)
Non-Hazard Flammable Skin Irritant Pois	on B Unkn	own 🖂	Radiological			E		To Client	Disposal By Lab	Archit	
Deliverable Requested: I, II, III, IV, Other (specify)						Spe	icial Instru	uctions/QC Requiren	nents:		
Empty Kit Relinquished by:		Date:			Ti	me:			Method of Shipment		
Relinquished by:	Date/Time:	* 1.2.		Company			Received by	Y = 010 11	Date/Tin		Company
Relinquistred by)	5/17/19 Date/Time: 1	0035		Gompany	-		Received by		Date/Tin	5/17/1	Company
Religioned by:	5/21/fl	14:0	99	Company Company	5		Received by	going Cool	382 SI	21/19	14:00 NHDES
	Date i mile:			Company			(SILIN	1-602 Ballering	122/19	930 ETAW
Custody Seals Intact: Custody Seal No.: A Yes A No							Cooler Tes	perature(s) C and Other	Remarks:		

6/12/2019

Page 16 of 17

Ver; 08/04/2016

Job Number: 320-50559-3

SDG Number: 17 Wimbledon Dr - Londonderry, NH

Login Number: 50559 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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:



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 Certification #VT1005 www.nelsonanalytical.com

Date Reported :

20-May-19 16:01

REPORT OF ANALYSIS 119051813.03

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 NOB_049, 17 Wimbledon Ln, Londonderry, NH

sampled Date: 15-May-2019 10:45

Nitrate

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

Danaukina

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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. Time Rec'd. Temp Rec'd: A Location: No. Cooler: V. N. Ioe: NA. NA. Settle: TC. Min. 40ML HCL. LC. OTHER. Turnaround Requirements (check one) Rush Samples Need Prior Approval	QUARIA	N ANA	ALYTICA n Analytical, LI Proj	L/I/AB	- 4 Hamail: frontdesk@aq	153 West Road bury, NH 03224 (603)783-9097 uarianlabs.com
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. Rush Samples Need Prior Approval Same Day Turnaround Two Day Turnaround Three Day Turnaround Normal Turnaround	Project #: 4 Project Name: 4 Town/Site: 4	95/60.00 orderchery to	udally Eval.	Project M	Manager: Mark Henderson eport To: Mark Henderson voice To: Mark Henderson Phone: 603-224-4182 E-mail: MHenderson Endis	ble
Sample Information	VOCs	SVOCs	Petroleum	Metals	Wet Chemistry / Inorganics	
Sample ID Collection Date/Time of Strate of S	# of Containers VOCs EPA 8260188260C Select Parameter only. VOCs EPA 524.2 Drinking Water Select Parameter only. 14-diovane / EDB 82608 SIM low level SVOCs EPA 8270C/8270D Full list / PAH only PCB Ancions	EPA 8082/ / 608 Pesticidas EPA 8081B / 608 Herbididas EPA 8151B EP	TPH Fuel Oil 81,000M Diesel Range Organics TPH Gasoline 8015B Gasoline Range Organics MADEP EPH MADEP VPH Petroleum Fingerprint Analysis	RCRA8 metals (circle) NI Coul Zn Fe / Mn (circle) Total / Dissolved Sodium / Calcum / Magnesium Total / Dissolved Additional Metals (Total / Dissolved):	EPA 300.0: Chloride / Sulfate Bromide Jungie / Ratife / Fluoride PH / Spec Con / Alkalinity (circle analysis requested) EPA SW446 Chapter EPA SW446 Chapter EPA 314.0: Perchlorate Closed-Cup Flashpoint / EPA 1010A ignitability EPA 1610A HEM Oil and Grease Clotal Dissolved Solids (TDS) / Total Dissolved Solids (TSS) TCLP (please also check off the required analyses)	Aquarian ID
Relinquished by: Date/Time: 57/57/9	Received by:		Receipt Conditions (lab	poratory use only):	PROJECT REQUIREMENTS (Please con	· .
Relinquished by: Relinquished by: Date/Time:	Received by:		Laboratory Supplied Containers? Containers intact/Properly Labele Were samples delivered on ige Receipt Temperature	ed? Yes / No Yes / No	ISO 17025 accreditation required?YesN EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM	



317 Elm Street Milford, NH 03055

Lab ID: 19050350

Date Received: 5/21/2019

(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

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





03302-0

317 Elm Street Milford, NH 03055

(603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

Derek S. Bennett

Concord

Control #:

19050350

Lab ID: Date: 19050350 6/10/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Project Name:

MTBE_01

Project Location: Londonderry NH

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"



Analytical Results

Lab ID:

Date:

19050350

6/10/2019

NHDES MtBE Remediation Bureau

Control #: 19050350

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

Concord NH 03302-0

Derek S. Bennett

Project Name: MTBE_01

Project Location: 7 Wimbeldon Dr Londonderry NH

Sample Cli	ient Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19050350-004 NC	OB_049				5/15/20	19 10:45:00 AM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroe	ethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,1-Trichloroethan		EPA 524.2	< 0.5 ug/L	200		6/28/2019	0.5	LauraB
1,1,2,2-Tetrachloroe	ethane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,1,2-Trichloroethan	ne	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	е	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichlorobenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,3-Trichloropropa	ane	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2,4-Trichlorobenze	ene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
1,2,4-Trimethylbenz	zene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,2-Dibromo-3-Chlo	ropropane	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-Dichlorobenzen	е	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	е	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
1,3,5-Trichlorobenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3,5-Trimethylbenz	zene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichlorobenzen	е	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,3-Dichloropropane	е	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
1,4-Dichlorobenzen	е	EPA 524.2	< 0.5 ug/L	75		6/28/2019	0.5	LauraB
2,2-Dichloropropane	е	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 F	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	l Butane (TAME)	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
2-Methoxy-2-Methyl	l Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		6/28/2019	0.5	LauraB
2-Methyl-2-Propano	ol (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
Bromochloromethar	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Bromodichlorometh	ane	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 Tetrachlorid	de	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

Page 1 of 3



19050350-004 Parameter Chloroethane Chloroform Chloromethane Cis-1,2-Dichloro	NOB_049	Method EPA 524.2	Result		5/15/20	19 10:45:00 AM	Drinki	ing water
Chloroethane Chloroform Chloromethane			Result					
Chloroform Chloromethane		FPA 524.2		MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Chloromethane			< 0.5 ug/L			6/28/2019	0.5	LauraB
		EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Cis-1.2-Dichlor		EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
0.0 .,= =	oethene	EPA 524.2	< 0.5 ug/L	70		6/28/2019	0.5	LauraB
Cis-1,3-Dichlore	opropene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Dibromomethai	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Etl	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 2 ug/L			6/28/2019	2	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Methyl ethyl ke	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
N-Propylbenzei	ne	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			6/28/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		6/28/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		6/28/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.



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

LINKS

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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.

Laboratory Job ID: 320-52692-2 SDG: 4 Morningside Drive - Londonderry, NH

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Definitions/Glossary

Job ID: 320-52692-2

Client: New Hampshire Dept of Environmental Serv Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

Qualifiers

TEQ

Toxicity Equivalent Quotient (Dioxin)

LCMS	
Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

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 0.6° 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

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

Client Sample ID: NOB_075

Lab Sam	ple 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		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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

Client Sample ID: NOB 075

Lab Sample ID: 320-52692-2

Matrix: Water

onem oumple ib. Nob_oro
Date Collected: 07/18/19 15:15
Date Received: 07/26/19 09:00

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	В	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-methylperfluorooctanesulfonamidoa cetic 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	

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
1802 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

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-52692-2	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Eurofins TestAmerica, Sacramento

Lab Sample ID: MB 320-311450/1-A

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

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

Client Sample	ID:	Method	Blan	k
---------------	-----	--------	------	---

Prep Type: Total/NA

Matrix: Water Analysis Batch: 311783 Prep Batch: 311450 MR MR

	MR MR							
Analyte	Result 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-methylperfluorooctanesulfonamidoa cetic 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

remuoro-n-nexadecanoic acid	NB		2.0	0.00 Tig/L	07701710 00:00	00/01/10 10.02	•
(PFHxDA)							
	МВ	MB					
Isotope Dilution	%Recovery	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
1802 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

l	Matrix: Water							Prep Type: Total/I	NA
l	Analysis Batch: 311783							Prep Batch: 3114	50
	-	Spike	LCS	LCS				%Rec.	
l	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Perfluorobutanoic acid (PFBA)	40.0	42.6		ng/L		106	70 - 130	_

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 17

Lab Sample ID: LCS 320-311450/2-A

Matrix: Water

Analyte

Analysis Batch: 311783

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

(PFOS)

(PFDS)

6:2 FTS 8:2 FTS

(PFHxDA)

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

LCS LCS

Result Qualifier Unit

Spike

Added

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

Client Sample ID	: Lab Control Sample
	Dren Types Total/NA

D %Rec

Prep Type: Total/NA

Prep Batch: 311450	
%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	40.0	36.3	ng/L	91	60 - 120	
(PFUnA)						
Perfluorododecanoic acid	40.0	39.6	ng/L	99	71 - 131	
(PFDoA)		, , , , ,				
Perfluorotridecanoic acid	40.0	41.2	ng/L	103	72 - 132	
(PFTriA)	40.0	27.0	/I	0.4	CO 400	
Perfluorotetradecanoic acid	40.0	37.6	ng/L	94	68 - 128	
(PFTeA) Perfluorobutanesulfonic acid	35.4	34.6	ng/L	98	73 - 133	
(PFBS)	00.1	01.0	11972	00	70-100	
Perfluorohexanesulfonic acid	36.4	33.8	ng/L	93	63 - 123	
(PFHxS)						
Perfluoroheptanesulfonic Acid	38.1	40.1	ng/L	105	68 - 128	
(PFHpS)						

35.9	ng/L	97	67 - 127	
34.9	ng/L	90	68 - 128	

101

67 - 127

ng/L

	6:2 FTS	37.9	35.2	ng/L	93 66 - 126	
١	8:2 FTS	38.3	37.7	ng/L	98 67 - 127	
ı	Perfluoro-n-hexadecanoic acid	40.0	40.7	ng/L	102 72 - 132	

40.3

37.1

38.6

40.0

(TTINDTY)	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-311450/3-A

Matrix: Water

(PFHxDA)

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup

Cheffe Gampie ID. Lab	Control Cumpic Dup
	Prep Type: Total/NA
	Prep Batch: 311450

Analysis Batch: 311783						Prep Ba	atch: 31	
Analyte	Spike Added	_	LCSD Qualifier	Unit	D %Rec	%Rec. Limits	RPD	RPD Limit
	40.0 —	41.8	Qualifier		— D 76Rec	70 - 130		30
Perfluorobutanoic acid (PFBA)				ng/L				
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-methylperfluorooctanesulfona midoacetic 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	40.0	38.8		ng/L	97	72 - 132	5	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-52692-2

Project/Site: DWGTF_Londonderry 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

4

5

6

8

9

11

13

14

15

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-52692-2 Project/Site: DWGTF_Londonderry SDG: 4 Morningside Drive - Londonderry, NH

Client Sample ID: NOB_075

Analysis

EPA 537(Mod)

Date Received: 07/26/19 09:00

Lab Sample ID: 320-52692-2 Date Collected: 07/18/19 15:15

311783

Matrix: Water

08/01/19 11:04 GMK

Lab

TAL SAC

TAL SAC

Batch **Batch** Dil Initial Final **Batch** Prepared Method Factor **Prep Type** Type Run Amount **Amount** Number or Analyzed Analyst Total/NA Prep 3535 294.2 mL 10.0 mL 311450 07/31/19 06:00 MTN

1

Laboratory References:

Total/NA

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.

i thority IAB	Program DoD		EPA Region	Identification Numb	Der Expiration Date 01-20-21
the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority.	This list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT		
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water	N-metl	hylperfluorooctanesulfo	onamidoacetic
				MeFOSAA)	
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFB/	۹)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFD	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (Pl	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Aci	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFI	HpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	I (PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFH	xA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic ac	id (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFN	A)
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid	(PFOS)
EPA 537(Mod)	3535	Water	Perfluc	orooctanoic acid (PFO	A)
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFF	PeA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (Pl	,

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	

880 Riverside Parkway

Page 16 of 17

8/13/2019

Chain of Custody Record

I OCT A DO	~~~
TestAme	

Phone (916) 737-5600 Fax (916) 372-1059	Sampler:	7 .		Lab			20		Ce	arrier Trackin	g No(s):		COC No:			
Client Information	Phone:	3-56		Joh E-Ma		Oriette S						Page:				
Derek Bennett	603-	499-20	207			.johnson@testamericainc.com						175.				
company: New Hampshire Dept of Environ Services								Analysis	Requ	ested			Job #:			
address: 29 Hazen Drive	Due Date Request	ed:			7	П		TT					Preservation Co	des:		
Sity:	TAT Requested (da	iys):		*	11	=	(a)	11					A - HCL B - NaOH	M - Hexane N - None		
Concord State, Zip:	Standard TAT	Standard TAT			Standard TAT			alytes	(3)						C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
IH, 03302 hone:				FO #:					F-M	E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3					
503) 271-8520	Purchase Order	Purchase Order not required			9	List	σ					1.5	G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate		
mail: erek.bennett@des.nh.qov	Wo #: Pay using 3904	wo #: Pay using 3904			10 NO	IDA - (MOD) PFAS, Standard List (gA Analytes)						6	I - Ice J - DI Water	U - Acetone V - MCAA		
roject Name: WGTF_Londonderry	NO #: SSOW#: SSO			Project #:			Ιľ				K - EDTA W - pH 4-5 L - EDA Z - other (specify)					
lite:	SSOW#:		_		mple (Ye	PFAS			1 1				Other:			
ondonderry, NH					d Sa	100	1 1 1			1 1		er of	<u></u>			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wawater, Sesolid, Gewaste/oil, BT=Tissue, AsAir)	Field Filtered Sample (Yes or Perform MS/MSD (Yes or No)	PFC_IDA - (M						Total Number	Special In	structions/Note:		
		> <		tion Code:	X							X				
NOB-075	7-18-19	1515	G	DW	NN	X						2	4 MORNIN	GSIDE DRIVE		
					$\dagger \dagger$	t		1								
					H			++	++	++	+	-				
					₩	H		\vdash	++	++-		-				
						-		++	-		+++					
						\vdash			++	-						
Possible Hazard Identification								A fee may	be asse	essed if s	amples are		ed longer than 1	month)		
Non-Hazard Flammable Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)	Poison B Unkno	own 🗀 F	Radiological				eturn To Clie Instructions/0	nt C Bemui	Disp	iosal By La	ab L	- Archi	ive For	Months		
1							man denoma,	ao megan	cincina.		Shipment:					
mpty Kit Relinquished by:	Date/Time:	Date:		Company	Time:		ment his			Method of	Date/Time:			Company		
eyriquished by	7.19,17 2	9:30		NODIS		K	lived by:	200	5		17/19/	119	9:30	HADES 5		
elinquished by:	Pale/Time:	132	0	Company	FL	Rece	SL PP	no.			Date/Time/	_	1320	Sh. Dong 2		
elinquished by:	Date/Time:	1 20		Company		Rece	ived by:	14			Date Time:	110	900	Company ETA-SAC		
Custody Seals Intact: Custody Seal No.:	207.07.			-		Cool	er Temperature(s) °C and Or	her Remar	ks:			100	EIN-SME		
Δ Yes Δ No	97621							1.			0.6					

Job Number: 320-52692-2

SDG Number: 4 Morningside Drive - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 52692

List Number: 1

Creator: Thompson, Sarah W

ordator. Thompoon, Garan II		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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 #95160.0	_{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:



NELSON ANALYTICAL LAB

RP190724178

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

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

Date Reported :

24-Jul-19 19:12

REPORT OF ANALYSIS 119072151.01

Londonderry WQ Eval., Londonderry, NH #95160.00 **NOB 075**

sampled Date: 18-Jul-2019 03:15

Nitrate

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	4.0	1	mg/L	07/19/2019 15:48	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	07/18/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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 IABOT - Z Santerbury, NH 03224 Phone: (603)783-9097

E-mail: frontdesk@aquarianlabs.com

Turnaround Requirements Rush Samp Please inquire about					A	Di	visi	ion	of	Ne	lso	n A	Ana	lyt)	ical	l, L	LC						E-r	nail	: fro	ontd	lesk	(@a	quaria	nlabs.co)m
Turnaround Requirements (check one)				<u> </u>	Project Information																										
Rush Samples Need Prior Approval Please inquire about Same Day Turnaround One Day Turnaround Two Day Turnaround Two Day Turnaround Two Day Turnaround Three Day Turnaround Normal Turnaround Normal Turnaround			Project #: 75/60.00 Project Name: LandanderRY WG EVAL. Town/Site: LandanderRY NH Sampler: D. Bush Company: Nobis Grado							Project Manager: MARK HENDERSON Report To: " Invoice To: ACCOUNTS PAYABLE Phone: 603-224-4192 E-mail: MHENDERSONE NOSIS-(2004) COM							* The state of the														
Sample Informa	ition			V	OC:	}		S	VOC)s			Pe	irole	um			Μe	tals		٧	Vet (Cher	nist	ry /	Inor	gani	cs			1
Sample ID NoR_ 075	Collection Date/Time	Sample Matrix		VOCs EPA 6260B/6260C Select Perameter only:	VOCs EIPA 524.2 Drinking Water Select Peremeter only.	1,4-dioxane / EDB 8260B SIM lov: level	SVOCs EPA 8270C/8270D Full list / PAH only	POB Arcdons EPA 8082A / 608	Pesticides EPA 8081B / 608	Herbicides EPA 8151A	Drinking Water SOCs (dr.cie.) 525.2 / 504.1 / 508 / 515.1	TPH Fuel Oil 8100M Diesel Range Organics	TPH Gasoline 80158 Gasoline Range Organits	MADEP EPH	MADEP VPH	Patroleum Fingerprint Analysis	CRAB metal®(clicle) (ola) Dissorved	Ni / Cu / Zn / Fe / Mn (drole) Total / Dissolved	Sodium / Caletum / Magnesium Total / Dissoyed	Additional Metals (Total / Dissolved):	X EPA 300.0; Chloride / Sulfate Bromide (Nitralle / Vitrifle) Fluoride	PH / Spec Con / Alkatinity (circle analysis requested)	EPA SW846 Chapter 7 Reactivity (Sulfide and Cyanide)	EPA 314,0; Perchlorate	Closed-Cup Flashpoint / EPA 1010A Ignitability	EPA 1564A HEM Oll and Grease	Total Dissolved Solids (TDS)/ Total Suspended Solids (TSS)	T BE	Aqu	arian ID	
	7644/3/5	DW .	1																												
Date Rec'd: Jime Rec'd: Ter Rec'd by: Location Cooler: N local Chlorine: Pos Neg NA Bottle: To MiN 40841 HCL LC	ip Rec'd:	4									-																				
Relinquished by: Relinquished by:	7/18/19 /S4+ Date/Jime:			Received by:					Receipt Conditions (laboratory use only) Laboratory Supplied Containers?: (es.) No Containers Intact/Properly Labelet() (res.) No				ly):	ISO 17925 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YasNo																	
Relinquished by:	rquished by: Date/Time:			Received by:						Were samples delivered on log?: Yes V No Receipt Temperature:						ls this: NH "Odd Forst" related?YesNo Does a price quote apply?_\textsNo FRM-AQ-SAMPLESUBMISSIONFORM-030916															



317 Elm Street Milford, NH 03055

Lab ID: 19070387

Date Received: 7/23/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19070387 Lab ID: 19070387

Date:

8/2/2019

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry Project Name:

Concord NH 03302-0

Project Location: Londonderry, NH

MTBE_01

19070387 Lab ID:

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"



NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19070387

Lab ID: 19070387

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

8/2/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 4 Morningside Dr Londonderry NH

Sample	Client Sample Identity	у			Start Date/T	ime Sampled:	Ма	trix
19070387-001	NOB_075			-	7/18/20	119 3:15:00 PM	Drinki	ng 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-Trichloroe	1,1,1-Trichloroethane		< 0.5 ug/L	200		7/27/2019	0.5	LauraB
1,1,2,2-Tetrach	loroethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
1,1-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,1-Dichloroeth	ene	EPA 524.2	< 0.5 ug/L	7		7/27/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2,3-Trichlorop	propane	EPA 524.2 < 0.5 ug/L				7/27/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		7/27/2019	0.5	LauraB
1,2,4-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2-Dibromo-3-0	Chloropropane	EPA 524.2	< 2 ug/L			7/27/2019	2	LauraB
1,2-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,2-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	600		7/27/2019	0.5	LauraB
1,2-Dichloroeth	ane	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
1,3,5-Trichlorob	enzene	EPA 524.2	< 1 ug/L			7/27/2019	1	LauraB
1,3,5-Trimethyll	benzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,3-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
1,4-Dichlorober	nzene	EPA 524.2	< 0.5 ug/L	75		7/27/2019	0.5	LauraB
2,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Chlorotoluene	e	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Ethoxy-2-Met	hyl 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-Me	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
2-Methoxy-2-Me	ethyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		7/27/2019	0.5	LauraB
2-Methyl-2-Prop	oanol (TBA)	EPA 524.2	< 12 ug/L			7/27/2019	12	LauraB
4-Chlorotoluene	e	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
4-Isopropyltolue	ene	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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Bromodichloron	omodichloromethane		< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Bromoform			< 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 Disulfid	е	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Carbon Tetrach	loride	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
							D 1 C	2

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Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ма	atrix
19070387-001	NOB_075				7/18/20	19 3:15:00 PM	Drinki	ng 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		7/27/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Dibromomethan	ne	EPA 524.2	< 0.5 ug/L			7/27/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 2 ug/L			7/27/2019	2	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		7/27/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		7/27/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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.

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 (484)685-0864

orlette.johnson@testamericainc.com

LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-50330-7 SDG: 11 Ross Dr. - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry SDG: 11 Ross Dr. - Londonderry, NH

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Qualifiers

ND

PQL

QC

RER

RPD

TEF

TEQ

RL

LCMS Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).

Not Detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Quality Control

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 11 Ross Dr. - Londonderry, NH

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 1.0° 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.

Job ID: 320-50330-7

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry 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 [Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.0	В	1.9	0.33	ng/L		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	В	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	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	JB	1.9	0.16	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.8	1	1.9	0.51	ng/L	1	EPA 537(Mod)	Total/NA
6:2 FTS	2.5	JB	9.4	1.9	ng/L		EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.0	В	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	В	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	В	1.9	0.19	ng/L		05/22/19 09:19	05/27/19 22:34	1
Perfluorohexanesulfonic acid (PFHxS)	1.4	JB	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-methylperfluorooctanesulfonamidoa cetic 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	JB	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

(PFHxDA)					
Isotope Dilution	%Recovery Quali	fier 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
1802 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

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry SDG: 11 Ross Dr. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-7	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/12/2019

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry 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	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 297184	Prep Batch: 296191
мв мв	

	MB	MB							
Analyte	Result	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	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		05/22/19 09:19	05/27/19 21:06	,
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	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	•
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	•
8:2 FTS	ND		2.0	0.38	ng/L		05/22/19 09:19	05/27/19 21:06	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.89	ng/L		05/22/19 09:19	05/27/19 21:06	•

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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

Lub Cumpic ib. Loc CLC Locio i/L A	Lab Sam	ple ID:	LCS 320	0-296191/2-A
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Matrix: Water Analysis Batch: 297184							Prep Type: Total/NA Prep Batch: 296191
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Eurofins TestAmerica, Sacramento

6/12/2019

Client Sample ID: Lab Control Sample

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Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 297184

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry SDG: 11 Ross Dr. - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 296191

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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	40.0	39.7		ng/L		99	72 - 132	

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

6/12/2019

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry SDG: 11 Ross Dr. - Londonderry, NH

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 Sa	ample	ID: Lak	Control Prep Ty Prep Ba	pe: Tot	al/NA
,	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	39.7		ng/L		99	67 - 127	8	30
· · · · · · · · · · · · · · · · · · ·									

37.9

38.3

40.0

47.7

37.6

38.4

ng/L

ng/L

ng/L

126

98

96

66 - 126

67 - 127

72 - 132

LCSD	LCS
LUSD	LUS

6:2 FTS

8:2 FTS

(PFHxDA)

Perfluoro-n-hexadecanoic acid

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

30

30

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QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry 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

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4

6

7

9

10

12

1 /

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-7 Project/Site: TrustFund_Londonderry SDG: 11 Ross Dr. - Londonderry, NH

Client Sample ID: TNK_DW-4

Lab Sample ID: 320-50330-7 Date Collected: 05/09/19 11:45 Date Received: 05/15/19 09:30

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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.

uthority NAB	Program DoD		EPA Region	Identification Number	Expiration Date 01-20-21
		urt but the leberator	, is not contified by the		
the agency does not o	•	ort, but the laboratory	ris not certified by the	governing authority. The	is list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water	N-metl	nylperfluorooctanesulfona	amidoacetic
			`	IMeFOSAA)	
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (P	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (F	PFDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHp/	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (F	PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA	\)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (P	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	•
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPe	۹)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PF	- FTeA)
EPA 537(Mod)	3535	Water		protridecanoic acid (PFTr	,
EPA 537(Mod)	3535	Water		proundecanoic acid (PFU	,

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

Eurofins TestAmerica, Sacramento

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	

Phone (916) 737-5600 Fax (916) 372-1059

880 Riverside Parkway

West Sacramento, CA 95605

4604 5366 1238

4604 3566

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

Client Information	Sampler	Kerlss	on		PM: nnson, (Orlette	s	Carrier Tracking No(s):		COC No:	
Client Contact: Derek Bennett	Phone			100	fail: ette inhi	nson@	testamericainc.com			Page:	
Company:	-			10.11		100110		Descripted		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Reques	ted:	_		1		Analysis	Requested		Preservation Co	odes:
29 Hazen Drive					JI					A-HCL	M - Hexane
City: Concord	TAT Requested (c	iays);			71	8				B-NaOH	N - None
State, Zip:	Standard TAT					(ST Analytes)		111111		C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302					41	# An	0/30	111111		E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
Phone: (603) 271-8520	PO #: Purchase Orde	r not require	d		2		9/0//			G - Amchior H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydra
Email:	WO#:	1			٦ž ۾	Standard List	4			I - Ice J - DI Water	U - Acetone V - MCAA
derek.bennett@des.nh.gov Project Name:	Pay using 3904 Project #:				Yes or	tand			containers	K-EDTA	W - pH 4-5
TrustFund_Londonderry /					les (18, 8			ntai	L - EDA	Z - other (specify)
Site: Londonderry, NH	SSOW#:				Samp SD ((MOD) PFAS,			05 10		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewster, Sesolid, Oswaste/oil, BT=Tissue, AsAi	Field Filtered Sample (Perform MS/MSD (Yes	PFC_IDA - (MOC			Total Number	Special I	nstructions/Note:
		> <		ation Code:	X				X		
MTBE -1120	5/9/19	0530	6	DW	W	X					
Field Deplicate Mant	5/9/19	0853	6	DW	4	×					
NOS-044 15Tyler RD Landonkers, NH	5/9/19	0925	6	DW	N	×		0.0000000000000000000000000000000000000			
MTBE _ 1123	5/19	1015	6	DW	N	k					
MTBE-1115	5/9/19	1035	6	DW	U	X					
NOB-045,25 Severance of handy lety At	5/9/19	1415	6	DW	M	λ		320-50330 Chain of 0	Custody		
TNK-DW-4	579/19	1145	6	Du	4	x		1 1 1 1 1 1			
NOR- 1916 Warst Landonderry . NH	519/19	1240	6	DW	N	K					
NOB-045,25 Exercince on howevery, No TNIC-DW-4 NOB-046, Illivest, Lowenderry, NH HTBE-1118	5/9/19	1345	6	سلا	N	X					
Possible Hazard Identification					Sa	mple	Disposal (A fee may	be assessed if samples	s are retain	ed longer than 1	month)
Non-Hazard Flammable Skin Irritant Poisc	on B Unkni	own \square_F	adiological		1	\square_{Re}	turn To Client	Disposal By Lab		ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)					Sp	ecial li	structions/QC Requir	ements:			
Empty Kit Relinquished by:		Date:			Time:			Method of Snipme	nt		
Figure 1997	Sto/19	0815		Company .	(Regell	DEA	- 5.4° Date/	19/201	9 0919	NHDES
Hetinguishad by:	5/14/19	1322		Company	24	Hosel S	Doing Coole	Date of	me:1 /14/19	1325	Company WHDE
Remausned w:	Date/Time:	1 700		Company		Receiv	ed by:	Date/#			Company
Custody Seals Intact: Custody Seal No.: 30 612						Coller	Temperature(s) C and Ot	has Demades			
MYes A No 30012								1.0	9K-8		-

Job Number: 320-50330-7

SDG Number: 11 Ross Dr. - Londonderry, NH

Login Number: 50330 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

Creator: Her, David A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	
s 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	
f 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	



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

NELSON ANALYTICAL LAB



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

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

Date Reported:

17-May-19 11:25

REPORT OF ANALYSIS

119051162.06

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 Drinking Water, TNK DW 4

sampled Date: 09-May-2019 11:45

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	2.3	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required?____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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

Analytical Results

Lab ID:

Derek S. Bennett

Control #: 19050245 19050245

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

6/10/2019

Concord NH 03302-0 Project Name: MTBE_01 Date:

Project Location:

Parameter	Sample Client Sample Identity	/			Start Date/T	ime Sampled:	Ма	ıtrix	
Parameter Method Result MCL Qualifier Analyzed ADIA Jose 1,11,1-2*Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 \$17122018 0.5 LauraB 1,11,2-2*Tetrachloroethane EPA 524.2 < 0.5 ug/L 200 \$17122019 0.5 LauraB 1,1-12*Trichloroethane EPA 524.2 < 0.5 ug/L 5 \$19712019 0.5 LauraB 1,1-10*Holroethane EPA 524.2 < 0.5 ug/L 7 \$19712019 0.5 LauraB 1,1-10*Holroethane EPA 524.2 < 0.5 ug/L 7 \$19712019 0.5 LauraB 1,1-10*Holroethane EPA 524.2 < 0.5 ug/L 7 \$19712019 0.5 LauraB 1,2-3*Trichloroeprane EPA 524.2 < 0.5 ug/L 7 \$19712019 0.5 LauraB 1,2-4*Trichloroeprapene EPA 524.2 < 0.5 ug/L 7 \$19712019 0.5 LauraB 1,2-Dichrobro-3*Chloropropane EPA 524.2 < 0.5 ug/L 5 \$19712019 0.5 LauraB <th>19050245-007 TNK_DW_4</th> <th></th> <th></th> <th></th> <th>5/9/201</th> <th>9 11:45:00 AM</th> <th colspan="3">Drinking water</th>	19050245-007 TNK_DW_4				5/9/201	9 11:45:00 AM	Drinking water		
Tarlameter Method Result Sharp					Date/Time				
1,1,1-Trichloroethane EPA 524.2 <0.5 ug/L 200 \$1772019 0.5 LauraB 1,1,2,2-Tertachloroethane EPA 524.2 <0.5 ug/L \$1772019 0.5 LauraB 1,1-1,2-Trichloroethane EPA 524.2 <0.5 ug/L \$1702019 0.5 LauraB 1,1-Dichloroethane EPA 524.2 <0.5 ug/L 7 \$1702019 0.5 LauraB 1,1-Dichloroptome EPA 524.2 <0.5 ug/L 7 \$1702019 0.5 LauraB 1,2,3-Trichlorobenzene EPA 524.2 <0.5 ug/L \$1702019 0.5 LauraB 1,2,4-Trichlorobenzene EPA 524.2 <0.5 ug/L \$1702019 0.5 LauraB 1,2,4-Trichlorobenzene EPA 524.2 <0.5 ug/L 70 \$1702019 0.5 LauraB 1,2-Dibromo-3-Chloropropane EPA 524.2 <0.5 ug/L 70 \$1702019 0.5 LauraB 1,2-Dichrome-3-Chloropropane EPA 524.2 <0.5 ug/L \$1702019 0.5 LauraB 1,2-Dichrome-4-browene EPA 524.2 <0.5 ug/L <th>Parameter</th> <th>Method</th> <th>Result</th> <th>MCL</th> <th>Qualifier</th> <th>Analyzed</th> <th>RDL</th> <th>Analyst</th>	Parameter	Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst	
1,1,2,2-Tetrachloroethane EPA 524,2 < 0.5 ug/L	1,1,1,2-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	1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	200		5/17/2019	0.5	LauraB	
1,1-Dichloroethane EPA 524.2 < 0.5 ug/L	1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,1-Dichloroethene EPA 524.2 < 0.5 ug/L	1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
1,1-Dichloropropene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB	
1,2,3-Trichloropropane EPA 524.2 < 0.5 ug/L	1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2,4-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2-Dibromo-3-Chloropropane EPA 524.2 < 2 ug/L	1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB	
1,2-Dibromoethane EPA 524.2 < 0.5 ug/L	1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	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	1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	600		5/17/2019	0.5	LauraB	
1,3,5-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
1,3,5-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB	
1,3-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
1,3-Dichloropropane EPA 524.2 < 0.5 ug/L	1,3,5-Trimethylbenzene	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	1,3-Dichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,3-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2-Chlorotoluene EPA 524.2 < 0.5 ug/L	1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	75		5/17/2019	0.5	LauraB	
2-Ethoxy-2-Methyl Propane (ETBE) EPA 524.2 < 0.5 ug/L	2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2-Hexanone EPA 524.2 < 12 ug/L	2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
2-Methoxy-2-Methyl Butane (TAME) EPA 524.2 < 0.5 ug/L	2-Ethoxy-2-Methyl Propane (ETBE)	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	2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB	
2-Methyl-2-Propanol (TBA)	2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	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 5/17/2019 0.5 LauraB Bromochloromethane 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 5/17/2019 0.5 LauraB Bromoform 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 Bromomethane EPA 524.2 < 0.5 ug/L 5/17/2019 0.5 LauraB Bromomethane EPA 524.2 < 0.5 ug/L 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	2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	13		5/17/2019	0.5	LauraB	
4-Isopropyltoluene EPA 524.2 < 0.5 ug/L	2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB	
Acetone EPA 524.2 < 12 ug/L 5/17/2019 12 LauraB Benzene EPA 524.2 < 0.5 ug/L	4-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Benzene EPA 524.2 < 0.5 ug/L 5 5/17/2019 0.5 LauraB Bromobenzene EPA 524.2 < 0.5 ug/L	4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			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	Acetone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB	
Bromochloromethane EPA 524.2 < 0.5 ug/L 5/17/2019 0.5 LauraB Bromodichloromethane EPA 524.2 < 0.5 ug/L	Benzene	EPA 524.2	< 0.5 ug/L	5		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	Bromobenzene	EPA 524.2	< 0.5 ug/L			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	Bromochloromethane	EPA 524.2	< 0.5 ug/L			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	Bromodichloromethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB	
Carbon Disulfide EPA 524.2 < 0.5 ug/L 5/17/2019 0.5 LauraB	Bromoform	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB	
2177 02 1.2 10.0 dg/L	Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Carbon Tetrachlorida	Carbon Disulfide	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB	
Carbon retractionice LFA 324.2 < 0.3 ug/L 5 0.17200 0.3 Edulab	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	Chlorobenzene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB	

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ma	atrix
19050245-007	TNK_DW_4				5/9/201	9 11:45:00 AM	Drinki	ng 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloror	methane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethan	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	adiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	Э	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
•			•					



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.



Environment Testing TestAmerica

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

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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.

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LC

Laboratory Job ID: 320-50330-1 SDG: 10 Spruce St. - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry SDG: 10 Spruce St. - Londonderry, NH

Qualifiers

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TEQ

Qualifier	Qualifier Description
В	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.
n	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)

6/12/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry SDG: 10 Spruce St. - Londonderry, NH

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 1.0° 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

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry 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	В	1.9	0.33	ng/L		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	В	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	JB	1.9	0.28	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	14	В	1.9	0.19	ng/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8	JB	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	В	9.6	1.9	ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry SDG: 10 Spruce St. - Londonderry, NH

Client Sample ID: MTBE_1120

Lab Sample ID: 320-50330-1 Date Collected: 05/09/19 08:30 **Matrix: Water** Date Received: 05/15/19 09:30

Method: EPA 537(Mod) - PFAS for QSM 5.1, Table B-15 Analyte Result Qualifier RL **MDL** Unit 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 1.9 0.47 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluoropentanoic acid (PFPeA) 1 2.5 Perfluorohexanoic acid (PFHxA) 4.3 1.9 0.55 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluoroheptanoic acid (PFHpA) 2.3 B 1.9 0.24 ng/L 05/22/19 09:19 05/27/19 21:30 0.81 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluorooctanoic acid (PFOA) 7.2 1.9 Perfluorononanoic acid (PFNA) 0.39 J 1.9 0.26 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluorodecanoic acid (PFDA) ND 1.9 0.30 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluoroundecanoic acid (PFUnA) ND 1.9 1.1 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluorododecanoic acid (PFDoA) ND 1.9 0.53 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluorotridecanoic acid (PFTriA) ND 1.9 1.2 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluorotetradecanoic acid 1.9 0.28 ng/L 05/22/19 09:19 05/27/19 21:30 0.31 JB (PFTeA) 1.9 0.19 ng/L 05/22/19 09:19 05/27/19 21:30 Perfluorobutanesulfonic acid 14 B

Isotono Dilution	%Pocovory	Qualifier	Limite			Propared	Analyzod	Dil
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L	05/22/19 09:19	05/27/19 21:30	
8:2 FTS	ND		1.9	0.36	ng/L	05/22/19 09:19	05/27/19 21:30	
cetic acid (NMeFOSAA) 6:2 FTS	22	В	9.6	1.9	ng/L	05/22/19 09:19	05/27/19 21:30	
N-methylperfluorooctanesulfonamidoa	ND		1.9	1.2	ng/L	05/22/19 09:19	05/27/19 21:30	
(PFOS) Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L	05/22/19 09:19	05/27/19 21:30	
(PFHpS) Perfluorooctanesulfonic acid	4.1		1.9	0.52	ng/L	05/22/19 09:19	05/27/19 21:30	
(PFHxS) Perfluoroheptanesulfonic Acid	ND		1.9	0.18	ng/L	05/22/19 09:19	05/27/19 21:30	
(PFBS) Perfluorohexanesulfonic acid	1.8	JB	1.9	0.16	ng/L	05/22/19 09:19	05/27/19 21:30	

(PFHxDA)					
Isotope Dilution	%Recovery Quali	fier 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
1802 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

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry SDG: 10 Spruce St. - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50330-1	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Cumpage Lagand									

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

Eurofins TestAmerica, Sacramento

6/12/2019

Job ID: 320-50330-1 SDG: 10 Spruce St. - Londonderry, NH Project/Site: TrustFund_Londonderry

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 Sam	ple ID: Metho Prep Type: T Prep Batch:	otal/NA
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

	IVID	IVID							
Analyte	Result	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	
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		05/22/19 09:19	05/27/19 21:06	•
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		05/22/19 09:19	05/27/19 21:06	•
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		05/22/19 09:19	05/27/19 21:06	
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		05/22/19 09:19	05/27/19 21:06	•
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		05/22/19 09:19	05/27/19 21:06	•
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		05/22/19 09:19	05/27/19 21:06	
Perfluorotetradecanoic acid (PFTeA)	0.540	J	2.0	0.29	ng/L		05/22/19 09:19	05/27/19 21:06	•
Perfluorobutanesulfonic acid (PFBS)	0.202	J	2.0	0.20	ng/L		05/22/19 09:19	05/27/19 21:06	•
Perfluorohexanesulfonic acid (PFHxS)	0.453	J	2.0	0.17	ng/L		05/22/19 09:19	05/27/19 21:06	
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	•
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		05/22/19 09:19	05/27/19 21:06	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		2.0	1.2	ng/L		05/22/19 09:19	05/27/19 21:06	•
6:2 FTS	2.45	J	10	2.0	ng/L		05/22/19 09:19	05/27/19 21:06	•
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	,

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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

Matrix: Water							Prep Type: Total/NA
Analysis Batch: 297184							Prep Batch: 296191
•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	45.1		ng/L		113	70 - 130

Client Sample ID: Lab Control Sample

Page 8 of 19

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-296191/2-A

Matrix: Water

Analysis Batch: 297184

Perfluoro-n-hexadecanoic acid

(PFHxDA)

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry SDG: 10 Spruce St. - Londonderry, NH

LCS LCS

Spike

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

Client Sample	ID:	Lab	Control	Sam	ple
		Dror	Type:	Cotal/	NI A

Prep	i ype: i	otal/NA
Prep	Batch:	296191
%Rec.		

	Opine	LOO	LOO				/UITCC.	
Analyte	Added	Result	Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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	

40.0

39.7

ng/L

\sim c	•	22	

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Eurofins TestAmerica, Sacramento

72 - 132

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry SDG: 10 Spruce St. - Londonderry, NH

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

Lab Sample ID: LCSD 320-296191/3-A			C	Client Sa	ample	ID: Lab	Control		
Matrix: Water							Prep Ty	•	
Analysis Batch: 297184							Prep Ba	atch: 29	
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	41.3		ng/L		103	60 - 120	4	30
(PFUnA)				Ū					
Perfluorododecanoic acid	40.0	40.4		ng/L		101	71 - 131	7	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	41.1		ng/L		103	72 - 132	9	30
(PFTriA)				_				_	
Perfluorotetradecanoic acid	40.0	35.6		ng/L		89	68 - 128	3	30
(PFTeA)	35.4	36.5		n a /l		103	73 - 133	1	30
Perfluorobutanesulfonic acid (PFBS)	33.4	30.3		ng/L		103	13 - 133	'	30
Perfluorohexanesulfonic acid	36.4	33.6		ng/L		92	63 - 123	4	30
(PFHxS)	00.1	00.0		119/2		02	00-120		00
Perfluoroheptanesulfonic Acid	38.1	39.9		ng/L		105	68 - 128	8	30
(PFHpS)				-					
Perfluorooctanesulfonic acid	37.1	37.3		ng/L		101	67 - 127	7	30
(PFOS)									
Perfluorodecanesulfonic acid	38.6	39.7		ng/L		103	68 - 128	2	30
(PFDS)									
N-methylperfluorooctanesulfona	40.0	39.7		ng/L		99	67 ₋ 127	8	30
midoacetic acid (NMeFOSAA) 6:2 FTS	37.9	47.7		na/l		126	66 - 126	17	30
0.2 (10)	31.9	47.7		ng/L		120	00 - 120	17	30

38.3

40.0

37.6

38.4

(PFHxDA)	
	1000 100

8:2 FTS

Perfluoro-n-hexadecanoic acid

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

6/12/2019

ng/L

ng/L

98

96

67 - 127

72 - 132

4

3

30

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry 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

Job ID: 320-50330-1 SDG: 10 Spruce St. - Londonderry, NH Project/Site: TrustFund_Londonderry

Client Sample ID: MTBE_1120

Lab Sample ID: 320-50330-1 Date Collected: 05/09/19 08:30 **Matrix: Water**

Date Received: 05/15/19 09:30

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.

uthority NAB	Program DoD		EPA Region	Identification Number	<u>Expiration Date</u> 01-20-21
The following analytes the agency does not do	•	rt, but the laboratory	is not certified by the	e governing authority. Thi	is list may include analytes for whicl
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona NMeFOSAA)	midoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid (PI	FBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDo	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (I	PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA))
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic acid (Pf	FOS)
EPA 537(Mod)	3535	Water	Perfluc	orooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU)	nA)

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

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Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50330-1 Project/Site: TrustFund_Londonderry 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
	. <u></u>				
320-50330-1	MTBE_1120	Water	05/09/19 08:30	05/15/19 09:30	

West Sacramento, CA 95605

4604 5366 1238

Chain of Custody Record

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Client Information	Sampler:	Kerlss	4.0		PM: hnson,	Orlette	S	Carrier Tracking No(s):		GOC No:
Client Contact:	Phone:	E/131	on	E-A	Mail:	210				Page:
Derek Bennett Company:				ori	ette jon	nson⊚	testamericainc.com			Job #1
New Hampshire Dept of Environ Services	12				1	, ,	Analysis	s Requested		
Address: 29 Hazen Drive	Due Date Reques	led:								Preservation Codes: A - HCL M - Hexane
City- Concord	TAT Requested (d	lays):			71	(S)		111111		B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zip:	Standard TAT					Standard List (#T Analytes)		111111		D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
NH, 03302 Phone:	PO#:			_	+1	The contract of	2130			F - MeOH
(603) 271-8520	Purchase Orde	r not require	d		Θ.	List	(V)			H - Ascorbic Acid T - TSP Dodecahydrat
Email: derek.bennett@des.nh.gov	Pay using 3904	1			No.	dard	TILL		S	I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5
Project Name: TrustFund_Londonderry	Project #:				e (Ye	s, Star			containers	L - EDA Z - other (specify)
Site	SSOW#:				Sample SD (Ye	- (MOD) PFAS,				Other:
Londonderry, NH			OV. ACC	Matrix	ered Sa	(QO)			oer of	
			Sample Type	(Wawater,	Filter	DA-()			Total Number	
CIc Identification	Cample Date	Sample	(C=comp,	Sexolid, Dewaste/oil.	Field F	PFC IDA			otal	Special Instructions/Nata.
Sample Identification	Sample Date	Time		ation Code:		1			1 5	Special Instructions/Note:
MTBE -1120	5/9/19	0530	6	DW	W	K				
Field Doling Mant	5/9/19	0853-	6	DW	M	×				
MTBE-1120 Field Deplicate Man E NOS-044, 15Tyler RD, Landenberry, NH	5/9/19	0925	6	DW	N	×				
MTBE _ 1123	5/1/19	1015	6	DW	N	k				
MTBE - INS	5/9/19	1035	6	DW	N	X				
NOB-045,25 Severance on handendern An	5/9/19	1415	G	DW	N	A		320-50330 Chain of Cu	stody	
NOB-045,25 Severance of handendery, AN TNK-DW-4 NOB-096, Wwest, Londonderry, NH MTBE-1118	5/9/19	1145	6	Du	W	x				
NOB-046, Wwest Londonderry, NH	5/1/19	1240	6	DW	N	K				
MTBE-1118	5/9/19	1345	6	سلا	W	X				
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poisc	on B Unkno	D	adiological		Sa	1		be assessed if samples and Disposal By Lab		ed longer than 1 month) ive For Months
Deliverable Requested: I, II, III, IV, Other (specify)	III DIIKII	JWII 11	adiological	_	Sp		nstructions/QC Requir		Alcii	ve rorinonins
Empty Kit Relinquished by:		Date:			Time:			Method of Snipment		
itelinquished by:	Sto/19	0815		Company	(Receiv	ed by	5.4° Date/Tim	9/201	9 0919 NHDES
енгранняя бу:	Date/Time:	1000		Company V HOE	-,	Reselv	ed by	Date frim	eil ,	Company
emajushert vy	5/14/19 Date/Time:	1322		Company	3	Receiv	soon look	Date/Tim	e:/	1320 NHDE
Custody Seals Intact: Custody Seal No.:						1		505 5/1	5/19	930 STALLSAZ

4

Environment Testing TestAmerica

Tracking # 4604 5366 1238



SO PO FO / 2-Day / Ground / UPS / Courier / GSO /

ento otes

Notes:	Therm. ID: AF8 Corr. Factor:	. 2	_
	Ice Wet Gel Other	er	
		11.2	
	Cooler Custody Seal: 80012		
this form to record Sample Custody Seal, Cooler Coin the job folder with the COC. Notes:	Sample Custody Seal:		
	Cooler ID:		
	Temp Observed: 0.8 Corrected: 1	0	
	From: Temp Blank D Sample 🐚		
	NCM Filed: Yes D No D		
	Yes	No	NA
	Perchlorate has headspace?	0	700
	Alkalinity has no headspace?	D	000
	CoC is complete w/o discrepancies?		0
	Samples received within holding time?	0	0
	Sample preservatives verified?	0	P
	Cooler compromised/tampered with?	90	
	Samples compromised/tampered with?	B	0
	Samples w/o discrepancies?		0
	Sample containers have legible labels?	0	
	Containers are not broken or leaking?		
	Sample date/times are provided.		
	Appropriate containers are used?		
	Sample bottles are completely filled?		
		0	
	Multiphasic samples are not present?		
	Sample temp OK?		
	Sample out of temp?	1/21	

Job:

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50330-1

SDG Number: 10 Spruce St. - Londonderry, NH

Login Number: 50330 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Her, David A

oroator. Hor, Burna A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

NELSON ANALYTICAL LAB



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

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

Date Reported:

17-May-19 11:25

REPORT OF ANALYSIS 119051162.01

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 Drinking Water, MTBE_1120

sampled Date: 09-May-2019 08:30

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/10/2019 13:35	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	05/10/2019 16:40	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

Rocid by N Location:
Cooler N Ica:
Chlorine: Pos Neg
Rotile: TC MIN 40ML HC RP190517035 A Division of Nelson Analytical, LLC Turnaround Requirements (check one) Project Information Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Landanders GW Ax Ly Eval
Town/Site: Landan Aero,
Sampler: E. Ecrisson Project Manager: Mark Headerson
Report To: Mark Headerson
Invoice To: Accounts Parable
Phone: 603-224-4182
E-mail: MHenderson Endors-group.com Please inquire about Same Day Turnaround rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround effort, we will not charge Three Day Turnaround Company: Nobis - 6-1000 a rush fee. Please call ahead. Bid Reference: Normal Turnaround Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics Collection Sample ID Date/Time Aquarian ID X X Relinguished by: Date/Time: 5/9/19 Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): 1345 ISO 17025 accreditation required? _____Yes____No Relinguished by: Date/Time: EDD required? ____Yes____No Laboratory Supplied Containers (: Yes)/ No MCP Compliance required? ____Yes____No Containers Intact/Properly Labeled (Yes) / No Relinguished by: Date/Time: ls this NH "Odd Fund" related?____Yes____No Received by: Were samples delivered on ice? Yes / No Does a price quote apply?____Yes No Receipt Temperature: 4 8 c FRM-AQ-SAMPLESUBMISSIONFORM-030916



317 Elm Street Milford, NH 03055

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

Lab ID: 19050245

Date Received: 5/14/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/10/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19

19050245

Lab ID: 19050245

Date:

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Concord NH 03302-0

Project Name: MTBE_01

Project Location: Londonderry NH

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"



03302-0

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

NHDES MtBE Remediation Bureau

Analytical Results

Lab ID:

Date:

Derek S. Bennett

Control #: 19050245

19050245

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

6/10/2019

Concord NH

Project Name: MTBE_01

Project Location:

Parameter	Sample Client Sample Identity	/			Start Date/T	ime Sampled:	Ма	ntrix
Parameter	19050245-002 MTBE_1120				5/9/201	9 8:30:00 AM	Drinki	ng water
Parameter						Date/Time		
1,1,1-Trichloroethane EPA \$24.2 < 0.5 uglt 200 \$1172019 0.5 Laurals 1,1,2,2-Tertachloroethane EPA \$24.2 < 0.5 uglt 5 \$1772019 0.5 Laurals 1,1,2,2-Tertachloroethane EPA \$24.2 < 0.5 uglt 5 \$1772019 0.5 Laurals 1,1-Dichloroethane EPA \$24.2 < 0.5 uglt 7 \$1772019 0.5 Laurals 1,1-Dichloroethene EPA \$24.2 < 0.5 uglt 7 \$1772019 0.5 Laurals 1,2,3-Trichlorobenzene EPA \$24.2 < 0.5 uglt \$1772019 0.5 Laurals 1,2,4-Trichlorobenzene EPA \$24.2 < 0.5 uglt 70 \$1772019 0.5 Laurals 1,2,4-Trichlorobenzene EPA \$24.2 < 0.5 uglt \$1772019 0.5 Laurals 1,2,2-Dichloroethane EPA \$24.2 < 0.5 uglt \$1772019 0.5 Laurals 1,2-Dichloroethane EPA \$24.2 < 0.5 uglt \$1772019 0.5 Laurals 1,2-Dichloroethane EPA \$24.2	Parameter	Method	Result MC	CL	Qualifier		RDL	Analyst
1,1,2,2-Tetrachloroethane EPA 524.2 < 0.5 ug/L	1,1,1,2-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	1,1,1-Trichloroethane	EPA 524.2	< 0.5 ug/L	00		5/17/2019	0.5	LauraB
1,1-Dichloroethane EPA 524.2 < 0.5 ug/L	1,1,2,2-Tetrachloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,1-Dichloroetherne EPA 524.2 < 0.5 ug/L	1,1,2-Trichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,1-Dichloropropene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,3-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,1-Dichloroethene	EPA 524.2	< 0.5 ug/L	7		5/17/2019	0.5	LauraB
1,2,3-Trichloropropane EPA 524.2 < 0.5 ug/L	1,1-Dichloropropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1.2,4-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2,4-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2,3-Trichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dibromo-3-Chloropropane EPA 524.2 < 2 ug/L	1,2,4-Trichlorobenzene	EPA 524.2	< 0.5 ug/L ⁷	0		5/17/2019	0.5	LauraB
1,2-Dibromoethane EPA 524.2 < 0.5 ug/L	1,2,4-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dibromo-3-Chloropropane	EPA 524.2	< 2 ug/L			5/17/2019	2	LauraB
1,2-Dichloroethane EPA 524.2 < 0.5 ug/L 5 5/17/2019 0.5 LauraB 1,2-Dichloropropane EPA 624.2 < 0.5 ug/L	1,2-Dibromoethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,2-Dichloropropane EPA 524.2 < 0.5 ug/L 5 6/17/2019 0.5 LauraB 1,3,5-Trinchlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dichlorobenzene	EPA 524.2	< 0.5 ug/L	00		5/17/2019	0.5	LauraB
1,3,5-Trichlorobenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloroethane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3,5-Trimethylbenzene EPA 524.2 < 0.5 ug/L	1,2-Dichloropropane	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
1,3-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3,5-Trichlorobenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,3-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3,5-Trimethylbenzene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
1,4-Dichlorobenzene EPA 524.2 < 0.5 ug/L	1,3-Dichlorobenzene	EPA 524.2				5/17/2019	0.5	LauraB
2,2-Dichloropropane EPA 524.2 < 0.5 ug/L	1,3-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	1,4-Dichlorobenzene	EPA 524.2	< 0.5 ug/L 7	5		5/17/2019	0.5	LauraB
2-Ethoxy-2-Methyl Propane (ETBE) EPA 524.2 < 0.5 ug/L	2,2-Dichloropropane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone EPA 524.2 < 12 ug/L	2-Chlorotoluene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
2-Hexanone EPA 524.2 < 12 ug/L	2-Ethoxy-2-Methyl Propane (ETBE)	EPA 524.2				5/17/2019	0.5	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	2-Hexanone	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
2-Methyl-2-Propanol (TBA)	2-Methoxy-2-Methyl Butane (TAME)	EPA 524.2				5/17/2019	0.5	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 0.5 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 5/17/2019 0.5 LauraB Bromochloromethane 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 5/17/2019 0.5 LauraB Bromoform 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 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 5/17/2019 0.5 LauraB	2-Methoxy-2-Methyl Propane (MTBE)	EPA 524.2	< 0.5 ug/L	3		5/17/2019	0.5	LauraB
4-Isopropyltoluene EPA 524.2 < 0.5 ug/L	2-Methyl-2-Propanol (TBA)	EPA 524.2	< 12 ug/L			5/17/2019	12	LauraB
Acetone EPA 524.2 < 12 ug/L 5/17/2019 12 LauraB Benzene EPA 524.2 < 0.5 ug/L	4-Chlorotoluene	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	4-Isopropyltoluene	EPA 524.2	< 0.5 ug/L			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	Acetone	EPA 524.2				5/17/2019	12	LauraB
Bromochloromethane EPA 524.2 < 0.5 ug/L 5/17/2019 0.5 LauraB Bromodichloromethane EPA 524.2 < 0.5 ug/L	Benzene	EPA 524.2	< 0.5 ug/L	5		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	Bromobenzene	EPA 524.2	< 0.5 ug/L			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	Bromochloromethane					5/17/2019	0.5	
Bromoform EPA 524.2 < 0.5 ug/L 100 5/17/2019 0.5 LauraB Bromomethane EPA 524.2 < 0.5 ug/L	Bromodichloromethane		<u>~</u>	00		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	Bromoform	EPA 524.2		00		5/17/2019	0.5	
Carbon Disulfide EPA 524.2 < 0.5 ug/L 5/17/2019 0.5 LauraB Carbon Tetrachloride EPA 524.2 < 0.5 ug/L	Bromomethane	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	
Carbon Tetrachloride EPA 524.2 < 0.5 ug/L 5 5/17/2019 0.5 LauraB	Carbon Disulfide	EPA 524.2	<u> </u>			5/17/2019	0.5	
	Carbon Tetrachloride	EPA 524.2	<u>~</u>	5		5/17/2019	0.5	
	Chlorobenzene	EPA 524.2	_	00		5/17/2019	0.5	LauraB

Page 1 of 3



Sample	Client Sample Ide	ntity			Start Date/Time Sampled:		Ма	atrix
19050245-002	MTBE_1120				5/9/201	9 8:30:00 AM	Drinki	ng 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		5/17/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/17/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/17/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/17/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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 (603) 673-5440

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

Lab ID: 19050127

Date Received: 5/7/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19050127

Lab ID:

Date:

19050127 5/20/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Project Name:

MTBE_01

Project Location: Londonderry

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"



NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19050127

Lab ID: 19050127

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

5/21/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 46 Otterson Rd Londonderry NH

Sample CI	lient Sample Identity	/			Start Date/T	ime Sampled:	Ma	trix
19050127-002 NO	OB_039				5/2/201	9 11:25:00 AM	Drinki	ng water
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachloro	ethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroetha	ne	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachloro	ethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroethar	ne	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-Dichloropropen	е	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorobenz	zene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichloropropa	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorobenz	zene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylbenz	zene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-Chlo	oropropane	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-Dichlorobenzen	ne	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-Dichloropropan	е	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorobenz	zene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylbenz	zene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichlorobenzen	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropropan	е	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichlorobenzen	ne	EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropropan	е	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 I	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-Methy	d Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
2-Methoxy-2-Methy		EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Propand	ol (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
Bromochlorometha	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichlorometh		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 Tetrachlorio	de	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
			3 , –				D 1 C	2

Page 1 of 3



19050127-002	Client Sample Ide	nuty			Start Date/Time Sampled:		Matrix	
19050127-002 NOB_039					5/2/201	9 11:25:00 AM	Drinki	ng 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-Dichlord	oethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichlord	opropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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



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 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:

🔅 eurofins

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

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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.

Laboratory Job ID: 320-50156-2 SDG: 46 Otterson Rd - Londonderry, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

Qualifiers

	_		\sim
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RL

RPD

TEF

TEQ

Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
.1	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)

5/30/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

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 1.6° 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.

Job ID: 320-50156-2

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Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry 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 JB	2.0	0.35 ng/L		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.37 JB	2.0	0.17 ng/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry 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

Job ID: 320-50156-2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.2	JB	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	JB	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-methylperfluorooctanesulfonamidoa cetic 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

%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
88	50 - 150	05/16/19 09:47	05/26/19 22:31	1
93	50 - 150	05/16/19 09:47	05/26/19 22:31	1
87	50 - 150	05/16/19 09:47	05/26/19 22:31	1
93	50 - 150	05/16/19 09:47	05/26/19 22:31	1
91	50 - 150	05/16/19 09:47	05/26/19 22:31	1
94	50 - 150	05/16/19 09:47	05/26/19 22:31	1
95	50 - 150	05/16/19 09:47	05/26/19 22:31	1
98	50 - 150	05/16/19 09:47	05/26/19 22:31	1
95	50 - 150	05/16/19 09:47	05/26/19 22:31	1
95	50 - 150	05/16/19 09:47	05/26/19 22:31	1
92	50 - 150	05/16/19 09:47	05/26/19 22:31	1
51	50 - 150	05/16/19 09:47	05/26/19 22:31	1
89	50 - 150	05/16/19 09:47	05/26/19 22:31	1
95	50 - 150	05/16/19 09:47	05/26/19 22:31	1
89	50 - 150	05/16/19 09:47	05/26/19 22:31	1
91	50 - 150	05/16/19 09:47	05/26/19 22:31	1
109	50 - 150	05/16/19 09:47	05/26/19 22:31	1
	88 93 87 93 91 94 95 98 95 95 92 51 89 95 89 95	88 50 - 150 93 50 - 150 87 50 - 150 93 50 - 150 91 50 - 150 94 50 - 150 95 50 - 150 98 50 - 150 95 50 - 150 95 50 - 150 96 50 - 150 97 50 - 150 98 50 - 150 99 50 - 150 99 50 - 150 99 50 - 150 99 50 - 150 99 50 - 150	88 50 - 150 05/16/19 09:47 93 50 - 150 05/16/19 09:47 87 50 - 150 05/16/19 09:47 93 50 - 150 05/16/19 09:47 91 50 - 150 05/16/19 09:47 94 50 - 150 05/16/19 09:47 95 50 - 150 05/16/19 09:47 95 50 - 150 05/16/19 09:47 95 50 - 150 05/16/19 09:47 95 50 - 150 05/16/19 09:47 95 50 - 150 05/16/19 09:47 92 50 - 150 05/16/19 09:47 51 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89 50 - 150 05/16/19 09:47 89	88 50 - 150 05/16/19 09:47 05/26/19 22:31 93 50 - 150 05/16/19 09:47 05/26/19 22:31 87 50 - 150 05/16/19 09:47 05/26/19 22:31 93 50 - 150 05/16/19 09:47 05/26/19 22:31 91 50 - 150 05/16/19 09:47 05/26/19 22:31 94 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 92 50 - 150 05/16/19 09:47 05/26/19 22:31 51 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/19 22:31 95 50 - 150 05/16/19 09:47 05/26/1

5/30/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

				ent Isotope	Dilution Re	ecovery (Ac	•	.imits)	
		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)
320-50156-2	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Eurofins TestAmerica, Sacramento

5/30/2019

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: MB 320-294903/1-A

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

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

Client	Sample	ID:	Method	Blank
0110116	Gumpio		mounou	-iaiii

Prep Type: Total/NA

Matrix: Water Analysis Batch: 297148 Prep Batch: 294903

•	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MB	MB							

IVID	IVID	
	_	

	INID				
Isotope Dilution	%Recovery	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
1802 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				Cli	ent Sar	mple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 297148							Prep Batch: 294903
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Eurofins TestAmerica, Sacramento

5/30/2019

Page 8 of 17

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-294903/2-A

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

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

89

94

91

83

101

Client Sample	ID:	Lab	Control	Sample
		Prer	Type:	Total/NA

Prep Batch: 294903	
%Rec.	
Limits	

Matrix: Water Analysis Batch: 297148								Prep Type: Total/NA Prep Batch: 294903
Analyte			Spike Added	_	LCS Qualifier	Unit	D %Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)			40.0	36.3		ng/L		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			40.0	45.6		ng/L	114	60 - 120
(PFUnA)						Ü		
Perfluorododecanoic acid			40.0	44.3		ng/L	111	71 - 131
(PFDoA)						<u>-</u>		
Perfluorotridecanoic acid			40.0	44.0		ng/L	110	72 - 132
(PFTriA)			40.0	38.1		ng/L	95	68 - 128
Perfluorotetradecanoic acid (PFTeA)			40.0	30.1		TIG/L	95	00 - 120
Perfluorobutanesulfonic acid			35.4	36.9		ng/L	104	73 - 133
(PFBS)						Ü		
Perfluorohexanesulfonic acid			36.4	34.8		ng/L	96	63 - 123
(PFHxS)								
Perfluoroheptanesulfonic Acid			38.1	40.7		ng/L	107	68 - 128
(PFHpS)			27.4	27.4			404	07 407
Perfluorooctanesulfonic acid			37.1	37.4		ng/L	101	67 - 127
(PFOS) Perfluorodecanesulfonic acid			38.6	40.5		ng/L	105	68 - 128
(PFDS)			00.0	10.0		119/2	100	00-120
N-methylperfluorooctanesulfona			40.0	42.2		ng/L	106	67 - 127
midoacetic acid (NMeFOSAA)								
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			40.0	39.3		ng/L	98	72 - 132
(PFHxDA)								
		LCS						
Isotope Dilution	%Recovery	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					

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-294903/3-A

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

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

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA
	Data Datala 004000

Spike	LCSD	LCSD					iten: 28	RPD
Added			Unit	D	%Rec	Limits	RPD	Limit
40.0	41.1		ng/L		103	70 - 130	1	30
40.0	37.5		ng/L		94	66 - 126	3	30
40.0	38.5		ng/L		96	66 - 126	2	30
40.0	39.5		ng/L		99	66 - 126	11	30
40.0	40.3		ng/L		101	64 - 124	1	30
40.0	39.7		ng/L		99	68 - 128	7	30
40.0	38.4		ng/L		96	69 - 129	9	30
40.0	39.8		ng/L		100	60 - 120	13	30
40.0	41.0		ng/L		102	71 - 131	8	30
40.0	42.5		ng/L		106	72 - 132	3	30
40.0	35.3		ng/L		88	68 - 128	8	30
35.4	35.7		ng/L		101	73 - 133	3	30
36.4	34.7		ng/L		95	63 - 123	0	30
			ng/L					30
								30
			ng/L		104			30
40.0	37.4		ng/L		93	67 - 127	12	30
			ng/L		96			30
38.3	38.0		ng/L		99	67 ₋ 127	8	30
	40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 35.4 36.4 38.1 37.1	Added Result 40.0 41.1 40.0 37.5 40.0 39.5 40.0 40.3 40.0 39.7 40.0 38.4 40.0 39.8 40.0 41.0 40.0 35.3 35.4 35.7 36.4 34.7 38.1 38.1 37.1 36.4 38.6 40.0 40.0 37.4 37.9 36.5	Added Result 40.0 Qualifier 40.0 41.1 40.0 37.5 40.0 39.5 40.0 40.3 40.0 39.7 40.0 38.4 40.0 39.8 40.0 41.0 40.0 35.3 35.4 35.7 36.4 34.7 38.1 38.1 37.1 36.4 38.6 40.0 40.0 37.4 37.9 36.5	Added Result Qualifier Unit 40.0 41.1 ng/L 40.0 37.5 ng/L 40.0 38.5 ng/L 40.0 39.5 ng/L 40.0 40.3 ng/L 40.0 39.7 ng/L 40.0 38.4 ng/L 40.0 39.8 ng/L 40.0 41.0 ng/L 40.0 42.5 ng/L 40.0 35.3 ng/L 35.4 35.7 ng/L 36.4 34.7 ng/L 37.1 36.4 ng/L 38.6 40.0 ng/L 40.0 37.4 ng/L 37.9 36.5 ng/L	Added Result Qualifier Unit D 40.0 41.1 ng/L ng/L 40.0 37.5 ng/L ng/L 40.0 38.5 ng/L ng/L 40.0 40.3 ng/L ng/L 40.0 39.7 ng/L ng/L 40.0 38.4 ng/L ng/L 40.0 39.8 ng/L ng/L 40.0 42.5 ng/L 40.0 35.3 ng/L 35.4 35.7 ng/L 36.4 34.7 ng/L 37.1 36.4 ng/L 38.6 40.0 ng/L 40.0 37.4 ng/L 37.9 36.5 ng/L	Added Result Qualifier Unit D %Rec 40.0 41.1 ng/L 103 40.0 37.5 ng/L 94 40.0 38.5 ng/L 96 40.0 39.5 ng/L 99 40.0 40.3 ng/L 101 40.0 39.7 ng/L 96 40.0 38.4 ng/L 96 40.0 39.8 ng/L 100 40.0 41.0 ng/L 102 40.0 42.5 ng/L 106 40.0 35.3 ng/L 88 35.4 35.7 ng/L 95 38.1 38.1 ng/L 95 38.1 38.1 ng/L 98 38.6 40.0 ng/L 98 38.6 40.0 ng/L 93 37.9 36.5 ng/L 96	Spike Added LCSD Result Result Qualifier Unit Unit Unit Unit Unit Unit Unit Unit	Added Result Qualifier Unit D %Rec Limits RPD 40.0 41.1 ng/L 103 70-130 1 40.0 37.5 ng/L 94 66-126 3 40.0 38.5 ng/L 96 66-126 2 40.0 39.5 ng/L 99 66-126 11 40.0 40.3 ng/L 101 64-124 1 40.0 39.7 ng/L 99 68-128 7 40.0 38.4 ng/L 96 69-129 9 40.0 39.8 ng/L 100 60-120 13 40.0 41.0 ng/L 102 71-131 8 40.0 42.5 ng/L 106 72-132 3 40.0 35.3 ng/L 88 68-128 8 35.4 35.7 ng/L 95 63-123 0 38.1 38.1

40.0

41.2

ng/L

103

72 - 132

5

30

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 PFHxS	91		50 - 150
13C4 PFOS	98		50 - 150
d3-NMeFOSAA	101		50 - 150

93

105

Perfluoro-n-hexadecanoic acid

(PFHxDA)

M2-6:2 FTS

M2-8:2 FTS

Eurofins TestAmerica, Sacramento

50 - 150

50 - 150

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry 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

Job ID: 320-50156-2 Project/Site: TrustFund_Londonderry SDG: 46 Otterson Rd - Londonderry, NH

Client Sample ID: NOB_039

Lab Sample ID: 320-50156-2

Matrix: Water

Date Collected: 05/02/19 11:25 Date Received: 05/11/19 14:44

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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.

uthority NAB	Program DoD		EPA Region	Identification Number	Expiration Date 01-20-21
		urt but the leberator	, is not contified by the		
the agency does not o	•	ort, but the laboratory	ris not certified by the	governing authority. Th	is list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water	N-metl	nylperfluorooctanesulfona	amidoacetic
			`	IMeFOSAA)	
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (P	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (F	PFDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHp/	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (F	PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA	\)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (P	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	•
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPe	۹)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PF	- FTeA)
EPA 537(Mod)	3535	Water		protridecanoic acid (PFTr	,
EPA 537(Mod)	3535	Water		proundecanoic acid (PFU	,

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

Eurofins TestAmerica, Sacramento

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	

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11

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

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Client Information	Sampler: KARL KARLSSON				PM:	n, Orie	lette S	Carrier Tracking No(s):		COC No:	
Glient Contact: Derek Bennett	Phone:				tail: ette lo	nhnsc	on@testamericainc.com			Page:	
Company:								Deguarded		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Requested:				+		Analysis	Requested		Preservation Codes:	
29 Hazen Drive	TAT Requested (days):				41					A - HGL M - Hexane	
City: Concord	Standard TAT					9	(es)			B - NaOH N - None C - Zn Acetate D - AsNaO2	
State, Zip: NH, 03302							Slandard List (2 Chnalytes)			D - Nitrio Acid P - Na2045 E - NaHS04 D - Na2S03 F - MeOH R - Na2S203	
Phone; (603) 271-8520	PO #: Purchase Order not required				(0		List (20			F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate	
Email: derek.bennett@des,nh.gov	Wo #: Pay using 3904				o N	(oN	gard		I.O.	I - Ice U - Acetone J - DI Water V - MCAA	
Project Name:	Project #:					or	Stano		ainer	K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
TrustFund_Londonderry Site:	SSOW#:				nple (Yes	SD (Yes	PFAS		containers	Other:	
Londonderry, NH						MSD	(a)		to		
		Sample	Sample Type (C=comp,	Matrix (W=yater, Scalid, Oswaste/oil,	Field Filtered	orm	PFC_IDA - (MOD)		Total Number		
Sample Identification	Sample Date	Time		BT=Tissue, A=A	***	Ž.	ā		F	Special Instructions/Note:	
FIELD BLANK	5/2/19	0300	6	DU	M	1	X				
NOB-039, 460HessanRd, Londanderry, MH	74.4	1125	6	DW	M	7	x				
NOB-040 GTG-LCBEASTRE LOWER ANDERSY AV	5/2/19	1220	G	DW	N	7	×				
NOB-041,19HO-ON-HOLDS, LONDONDERPY, NH	5/2/19	1250	6	Da	W	1	x				
			6	DW	N		x				
NOB-042, IS PARTE IDGGLN, LONDON DERDON NA NOB-043, 216 AWSON FARMED, LONDON DERDY	NH 5/2/A	14120	G	ENTE	M		X				
Use characters before first com	me es s	tohon	1D			_	320-50156 Chain of Cus	stody -			
						1	1 1 1 1 1	le le le le le le le le le le le le le l			
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 Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:			Tim	10:	00.1	/ Method of Shipment:	-		
Relinquished by:	Date/Time; Company					Recawethol Company					
Semantificative 1	5/3/19 0930 Win			Company		Received by Date/Time: Company					
Rejuguehad by.	Date/Time: Company DES				_	R	Shippy couler	2.9° \$17/	19 1	14110 DES	
-	Market Control						0	Date/fime: 5/9//	9	900 ETA-SAC	
ustody Seals Intact: Custody Seal No.: 806016							Cooler Temperature(s) "C and Other Remarks:				

Page 16 of 17

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-2

SDG Number: 46 Otterson Rd - Londonderry, NH

Login Number: 50156 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Nelson, Kym D

Creator. Neison, Kynn D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:		Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		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:



NELSON ANALYTICAL LAB

RP190513098

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

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

Date Reported :

13-May-19 17:18

REPORT OF ANALYSIS

119050295.01

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 NOB_039, 46 Otterson, Londonderry, NH

sampled Date: 02-May-2019 11:25

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Keporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	4.0	1	mg/L	05/06/2019 11:26	SM 4500 NO3 D	SUB2

Danaukina

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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: Temp R A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Londonburry & Oudity Eval

Town/Site: Londonburry Please inquire about Same Day Turnaround Project Manager: Mark Manderson
Report To: Mark Menderson
Invoice To: Mccounts Payable
Phone: 603-224-4182
E-mail: Menderson Ender-Grove.com rush service. If we are able to meet your rush One Day Turnaround needs with reasonable Two Day Turnaround effort, we will not charge Sampler: Karl Karlsion a rush fee. Please call Three Day Turnaround Company: Nabis - Gron ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics # Of Containers
VOCs EPA 82808/8280C
Select Parameter only.
VOCs EPA 524.2 Drinking W
Select Parameter only.
1/4-dioxane / EDB
8260B SIM low level
8200S EPA 8270C/8270D
FULL RIST / PAH only All samples taken 5/2 per K. Karlson Date of the collection of the Sample ID NOB- 039, Hotterson, Landersking, Ath Aquarian ID 0 Relinguished by: Date/Time: \$/3/19 * Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete):

Laboratory Supplied Containers Yes No

Were samples delivered on ice?: Yes / No.

Containers Intact/Properly Labeled?: (Tes. / No

ISO 17025 accreditation required? _____Yes___

Is this NH "Odd Fund" related?

EDD required? ____Yes____No

MCP Compliance required? ____Yes___

Relinquished by:

Relinquished by:

+see attached

Received by:

Date/Time:



317 Elm Street Milford, NH 03055 (603) 673-5440

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

Lab ID: 19050127

Date Received: 5/7/2019

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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

NH

03302-0

Derek S. Bennett

Concord

Control #:

19050127

Lab ID:

Date:

19050127 5/20/2019

29 Hazen Drive, PO Box 95

Project Number:

TrustFund Londonderry

Project Name:

MTBE_01

Project Location: Londonderry

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"



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

NHDES MtBE Remediation Bureau

Analytical Results

Date:

Derek S. Bennett

Control #: 19050127

Lab ID: 19050127

29 Hazen Drive, PO Box 95

Project Number: TrustFund Londonderry

5/21/2019

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: 97 Gilcreast Rd Londonderry NH

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19050127-003	NOB_040				5/2/201	9 12:20:00 PM	Drinki	ng water
				***	0 117	Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachl	loroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,1-Trichloroe	thane	EPA 524.2	< 0.5 ug/L	200		5/16/2019	0.5	LauraB
1,1,2,2-Tetrachl	loroethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1,2-Trichloroe	thane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,1-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,1-Dichloroethe	ene	EPA 524.2	< 0.5 ug/L	7		5/16/2019	0.5	LauraB
1,1-Dichloropro	pene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,3-Trichlorop	ropane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2,4-Trichlorob	enzene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
1,2,4-Trimethylk	penzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dibromo-3-0	Chloropropane	EPA 524.2	< 2 ug/L			5/16/2019	2	LauraB
1,2-Dibromoeth	ane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,2-Dichloroben	zene	EPA 524.2	< 0.5 ug/L	600		5/16/2019	0.5	LauraB
1,2-Dichloroetha	ane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,2-Dichloropro	pane	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
1,3,5-Trichlorob		EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3,5-Trimethylk	penzene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloroben		EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,3-Dichloropro	pane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
1,4-Dichloroben		EPA 524.2	< 0.5 ug/L	75		5/16/2019	0.5	LauraB
2,2-Dichloropro	pane	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-Metl	hyl 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
	ethyl Butane (TAME)	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
-	ethyl Propane (MTBE)	EPA 524.2	< 0.25 ug/L	13		5/16/2019	0.25	LauraB
2-Methyl-2-Prop	,	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-Isopropyltolue		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
Bromochlorome	ethane	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Bromodichloron		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 Disulfid		EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Carbon Tetrach		EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Chlorobenzene	ionao	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
CHICHODEHZEHE		LI A 324.2	< 0.5 ug/L				0.5	Laurab

Page 1 of 3



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

Sample	Client Sample Ide	ntity			Start Date/T	ime Sampled:	Ма	atrix
19050127-003	NOB_040				5/2/201	9 12:20:00 PM	Drinki	ing 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-Dichloro	oethene	EPA 524.2	< 0.5 ug/L	70		5/16/2019	0.5	LauraB
Cis-1,3-Dichloro	opropene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dibromochloror	nethane	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Dibromomethar	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Dichlorodifluoro	methane	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 Eth	ner	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
Hexachlorobuta	ndiene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Isopropylbenze	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Methyl ethyl ket	tone (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 Chlo	oride	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	e	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
N-Propylbenzer	ne	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Sec-Butylbenze	ene	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-Butylbenze	ene	EPA 524.2	< 0.5 ug/L			5/16/2019	0.5	LauraB
Tetrachloroethe	ene	EPA 524.2	< 0.5 ug/L	5		5/16/2019	0.5	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	EPA 524.2	< 0.5 ug/L	100		5/16/2019	0.5	LauraB
Trans-1,3-Dichl	oropropene	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
Trichlorofluoron	nethane	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
(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.

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

LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.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.

Laboratory Job ID: 320-50156-3 SDG: 97 Gilcreast Rd - Londonderry, NH

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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	

В Compound was found in the blank and sample.

Qualifier Description

I Value is EMPC (estimated maximum possible concentration).

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. J

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)

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DL, RA, RE, IN

Decision Level Concentration (Radiochemistry) DLC

EDL Estimated Detection Limit (Dioxin) Limit of Detection (DoD/DOE) LOD 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) Toxicity Equivalent Quotient (Dioxin) TEQ

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-3 Project/Site: TrustFund Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

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 1.6° 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

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

Client Sample ID: NOB_040

l ah	Sampl		320.	-501	156_3
Lab	Jaiiibi	TID.	320	-30	100-0

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.6	В	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	JI	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	В	1.9	0.16	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	JI	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

Client Sample ID: NOB_040

Lab Sample ID: 320-50156-3

Matrix: Water

Date	Collected:	05/02/19	12:20
Date	Received:	05/11/19	14:44

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	5.6	В	1.9		ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluoropentanoic acid (PFPeA)	7.1		1.9		ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorohexanoic acid (PFHxA)	8.7		1.9	0.55	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluoroheptanoic acid (PFHpA)	3.6		1.9	0.24	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorooctanoic acid (PFOA)	15		1.9	0.81	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorononanoic acid (PFNA)	0.47	JI	1.9	0.26	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorobutanesulfonic acid (PFBS)	6.0		1.9	0.19	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorohexanesulfonic acid (PFHxS)	9.7	В	1.9	0.16	ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	JI	1.9		ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorooctanesulfonic acid (PFOS)	5.8		1.9		ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		05/16/19 09:47	05/26/19 22:39	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			05/26/19 22:39	
6:2 FTS	ND		9.6		ng/L		05/16/19 09:47	05/26/19 22:39	
8:2 FTS	ND		1.9		ng/L		05/16/19 09:47	05/26/19 22:39	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		05/16/19 09:47	05/26/19 22:39	
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	82		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C5 PFPeA	88		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C2 PFHxA	81		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C4 PFHpA	85		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C4 PFOA	92		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C5 PFNA	93		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C2 PFDA	97		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C2 PFUnA	94		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C2 PFDoA	97		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C2 PFTeDA	89		50 - 150				05/16/19 09:47	05/26/19 22:39	
13C3 PFBS	92		50 - 150					05/26/19 22:39	
13C2 PFHxDA	62		50 - 150				05/16/19 09:47	05/26/19 22:39	
1802 PFHxS	89		50 ₋ 150				05/16/19 09:47	05/26/19 22:39	
13C4 PFOS	91		50 ₋ 150				05/16/19 09:47	05/26/19 22:39	
d3-NMeFOSAA	91		50 - 150					05/26/19 22:39	
M2-6:2 FTS	92		50 - 150					05/26/19 22:39	
M2-8:2 FTS	102		50 - 150					05/26/19 22:39	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50156-3	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

5/30/2019

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: MB 320-294903/1-A

Matrix: Water

Analysis Batch: 297148

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

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

Client	Sample	ID:	Method	Blank
0110116	Gumpio		mounou	-iaiii

Prep Type: Total/NA

Prep Batch: 294903

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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		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

(PFHxDA)	115		2.0	0.00 Hg/L	00/10/10 00:11	00/20/10 21:00	•
(FFIXDA)	MB	МВ					
Isotope Dilution	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
13C4 PFBA	91		50 - 150		05/16/19 09:47	05/26/19 21:03	
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
1802 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							Prep Type: Total/NA
Analysis Batch: 297148							Prep Batch: 294903
•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-294903/2-A

Matrix: Water

Analyte

(PFUnA)

(PFDoA)

(PFTriA)

(PFTeA)

(PFBS)

(PFHxS)

(PFHpS)

(PFOS)

(PFDS)

6:2 FTS

Perfluorododecanoic acid

Perfluorotridecanoic acid

Perfluorotetradecanoic acid

Perfluorobutanesulfonic acid

Perfluorohexanesulfonic acid

Perfluoroheptanesulfonic Acid

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Analysis Batch: 297148

Perfluoropentanoic acid (PFPeA) Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA) Perfluorodecanoic acid (PFDA) Perfluoroundecanoic acid

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

LCS LCS

Spike

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

Client Sample	ID:	Lab	Contro	I Samp	ole
		Pron	Type	Total/N	VΔ

Prep Batch: 294903 %Rec.

Added	Pocult	Qualifier Unit	D %Rec	Limits
40.0	36.3	ng/L	91	66 - 126
40.0	39.2	ng/L	98	66 - 126
40.0	43.9	ng/L	110	66 - 126
40.0	40.8	ng/L	102	64 - 124
40.0	42.6	ng/L	106	68 - 128
40.0	41.9	ng/L	105	69 - 129
40.0	45.6	ng/L	114	60 - 120
40.0	44.3	ng/L	111	71 - 131
40.0	44.0	ng/L	110	72 - 132
40.0	38.1	ng/L	95	68 - 128
35.4	36.9	ng/L	104	73 - 133

34.8 ng/L 96 63 - 123 40.7 ng/L 107 68 - 128 37.4 101 67 - 127ng/L

105

68 - 128

40.0 42.2 ng/L 106 67 - 12766 - 126 37.9 41.5 ng/L 109

ng/L

8:2 FTS 38.3 41.1 ng/L 107 67 - 127 Perfluoro-n-hexadecanoic acid 40.0 39.3 ng/L 98 72 - 132 (PFHxDA)

36.4

38.1

37.1

38.6

40.5

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

5/30/2019

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-294903/3-A

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

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

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA
	Data Datala 004000

Matrix: Water							Prep Ty	e: Tot	al/NA
Analysis Batch: 297148							Prep Ba	tch: 29	
	Spike	LCSD					%Rec.		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	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	40.0	41.0		ng/L		102	71 - 131	8	30
(PFDoA)									
Perfluorotridecanoic acid	40.0	42.5		ng/L		106	72 - 132	3	30
(PFTriA)	40.0	35.3		ng/L		88	68 - 128	8	30
Perfluorotetradecanoic acid (PFTeA)	40.0	33.3		iig/L		00	00 - 120	0	30
Perfluorobutanesulfonic acid	35.4	35.7		ng/L		101	73 - 133	3	30
(PFBS)									
Perfluorohexanesulfonic acid	36.4	34.7		ng/L		95	63 - 123	0	30
(PFHxS)	38.1	38.1		na/l		100	68 - 128	7	30
Perfluoroheptanesulfonic Acid (PFHpS)	30.1	30.1		ng/L		100	00 - 120	,	30
Perfluorooctanesulfonic acid	37.1	36.4		ng/L		98	67 ₋ 127	3	30
(PFOS)				Ū					
Perfluorodecanesulfonic acid	38.6	40.0		ng/L		104	68 - 128	1	30
(PFDS)									
N-methylperfluorooctanesulfona	40.0	37.4		ng/L		93	67 ₋ 127	12	30
midoacetic acid (NMeFOSAA) 6:2 FTS	37.9	36.5		na/l		06	66 - 126	13	20
				ng/L		96			30
8:2 FTS	38.3	38.0		ng/L		99	67 - 127	8	30

40.0

41.2

ng/L

103

72 - 132

•	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 PFHxS	91		50 - 150
13C4 PFOS	98		50 ₋ 150
d3-NMeFOSAA	101		50 - 150

93

105

Perfluoro-n-hexadecanoic acid

(PFHxDA)

M2-6:2 FTS

M2-8:2 FTS

Page 10 of 17

50 - 150

50 - 150

30

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Project/Site: TrustFund_Londonderry 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

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Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50156-3 Project/Site: TrustFund_Londonderry SDG: 97 Gilcreast Rd - Londonderry, NH

Client Sample ID: NOB_040

Lab Sample ID: 320-50156-3 Date Collected: 05/02/19 12:20 **Matrix: Water**

Date Received: 05/11/19 14:44

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

5/30/2019

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.

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perflu	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

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	

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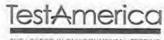
13

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15

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

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Client Information	Sampler:	VARUS.	515 11		PM:	n, Oriette S		Carrier Tracking No(s):		COC No:	
Glient Contact: Derek Bennett	Phone:			E-M		hnso	on@testamericainc.com			Page:	
Company:	-			950	T			Degreeted		Job #:	
New Hampshire Dept of Environ Services Address:	Due Date Request	ed:	_		1		Analysis	Requested		Preservation Codes:	
29 Hazen Drive	TAT Requested (da	uic).			41					A - HGL M - Hexane	
City: Concord		iys).				S	(es)			B - NaOH N - None C - Zn Acetate D - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Slandard List (2 O Analyles)			D - Nitrio Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3	
Phone; (603) 271-8520	PO#: Purchase Order	not require	d		(0		ist (2 1			F - MeOH R - Na2S2O3 G - Amothor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate	
Email: derek.bennett@des,nh.gov	wo #: Pay using 3904				or N	(ON	and I		0	I - Ice U - Acetone J - DI Water V - MCAA	
Project Name:	Project #:				٦٥١	or	Stano		containers	K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
TrustFund_Londonderry Site:	SSOW#:	_	_		- ld	SD (Yes	PFAS,		cont	Other:	
Londonderry, NH						MSD	a (i)		70		
		Sample	Sample Type (C=comp,	Matrix (W=water, Sesolid, O=waste/oil,	Field Filtered	m.o	PFC_IDA - (MOD)		Total Number		
Sample Identification	Sample Date	Time		BT=Tissue, A=Ai	THE STATE OF THE S	Ž.	<u>a</u>		1 F	Special Instructions/Note:	
FIELD BLANK	5/2/19	0300	6	DU	M		X				
NOB-039, 460HessanRd, Londanderry, MH	74.4	1125	6	DW	W)	x				
NOB-040 GTG-LCBEASTED LOW ANDERSY AV	5/2/19	1220	G	DW	M	>	×				
NOB-041,19HO-ON-HOLDS, LONDONDERPY, NH	5/2/19	1250	6	Da	W	1	x				
			6	DW	N		×				
NOB-042, IS PARTE IDGGLN, LONDON DERDON NA NOB-043, 216 AWSON FARMED, LONDON DERDY	VH 5/2/19	14120	G	ENTE	M		X				
					H				-		
* Use churches before first com	mc es s	tohon	1D*		H				4		
					H	3	320-50156 Chain of Cus	tody	-		
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poiso Deliverable Requested: 1, II, III, IV, Other (specify)	n B Unkno	own \square_F	Radiological				ple Disposal (A fee may Return To Client	be assessed if samples a Disposal By Lab ements:	re retaine Archi		
Empty Kit Relinquished by:	-	Date:			Tim	ie:	00 0	/ Method of Shipment:	-		
Relinquished by:	Date/Time:			Company	-		MADES COLD SX	1- Date/Time	-1-1	Company	
General Festivi)	5/3/F1 Date/Time:	0930)	Company		H	leceived by:	ryc (5.1°C)	>/3/	19 9:30 NHDES	
Stram.	5/7/19	14:10		DES		1	Shiloan color	2.90 5/7	/19 /	4110 DES	
Rejurguened by:	Date/Time:			Company		H	eceived by	Dater Time 5/9	119	900 ETA-SAC	
Custody Seal No.: 800	0016					Co	cooler Temperature(s) "C and Off	her Remarks:	.6.0	/	

Page 16 of 17

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50156-3

SDG Number: 97 Gilcreast Rd - Londonderry, NH

Login Number: 50156 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Nelson, Kym D

Creator: Nelson, Kym D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:		Drinking Water	02-May-19 11:25	02-May-19 15:45
119050295.02	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:20	02-May-19 15:45
119050295.03	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 12:50	02-May-19 15:45
119050295.04	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		Drinking Water	02-May-19 13:50	02-May-19 15:45
119050295.05	Londonderry GW Quality Eval, Londonderry, NH, #95160.00:		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:



NELSON ANALYTICAL LAB

RP190513098

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

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

Date Reported :

13-May-19 17:18

REPORT OF ANALYSIS

119050295.02

Londonderry GW Quality Eval, Londonderry, NH, #95160.00 NOB_040, 97 Gilcreast, Londonderry, NH

sampled Date: 02-May-2019 12:20

Nitrate

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

Donorting

Deporting

Nitrite

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

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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: Temp R A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project #: 95/60.00

Project Name: Londonburry & Oudity Eval

Town/Site: Londonburry Please inquire about Same Day Turnaround Project Manager: Mark Manderson
Report To: Mark Menderson
Invoice To: Mccounts Payable
Phone: 603-224-4182
E-mail: Menderson Ender-Grove.com rush service. If we are able to meet your rush One Day Turnaround needs with reasonable Two Day Turnaround effort, we will not charge Sampler: Karl Karlsion a rush fee. Please call Three Day Turnaround Company: Nabis - Gron ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics # Of Containers
VOCs EPA 82808/8280C
Select Parameter only.
VOCs EPA 524.2 Drinking W
Select Parameter only.
1/4-dioxane / EDB
8260B SIM low level
8200S EPA 8270C/8270D
FULL RIST / PAH only All samples taken 5/2 per K. Karlson Date of the collection of the Sample ID NOB- 039, Hotterson, Landersking, Ath Aquarian ID 0 Relinguished by: Date/Time: \$/3/19 * Received by: Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete):

Laboratory Supplied Containers Yes No

Were samples delivered on ice?: Yes / No.

Containers Intact/Properly Labeled?: (Tes. / No

ISO 17025 accreditation required? _____Yes___

Is this NH "Odd Fund" related?

EDD required? ____Yes____No

MCP Compliance required? ____Yes___

Relinquished by:

Relinquished by:

+see attached

Received by:

Date/Time:



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

TestAmerica

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

LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Quality Control

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

Qualifiers

10	MAC
L	IVIO
_	

QC RER

RL

RPD TEF

TEQ

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

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 1.6° 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

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry 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	В	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	JI	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 E	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

Client Sample ID: NOB_052

M2-6:2 FTS

M2-8:2 FTS

Date Collected: 05/21/19 10:40 Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-3

Matrix: Water

Perfluorobutanoic acid (PFBA) Perfluoropentanoic acid (PFPeA) Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA)	3.3 3.7 4.3 3.3	В	1.9 1.9	0.33	ng/L	 06/04/19 06:51	06/05/19 05:20	•
Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA)	4.3		1.0		0	00/0 // 10 00.01		
Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA)			1.9	0.47	ng/L	06/04/19 06:51	06/05/19 05:20	
Perfluorooctanoic acid (PFOA)	3.3		1.9	0.55	ng/L	06/04/19 06:51	06/05/19 05:20	
			1.9	0.24	ng/L	06/04/19 06:51	06/05/19 05:20	•
Perfluorononanoic acid (PFNA)	12		1.9	0.81	ng/L	06/04/19 06:51	06/05/19 05:20	•
	0.83	J	1.9	0.26	ng/L	06/04/19 06:51	06/05/19 05:20	•
Perfluorodecanoic acid (PFDA)	0.32	JI	1.9	0.30	ng/L	06/04/19 06:51	06/05/19 05:20	•
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L	06/04/19 06:51	06/05/19 05:20	•
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L	06/04/19 06:51	06/05/19 05:20	•
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L	06/04/19 06:51	06/05/19 05:20	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L	06/04/19 06:51	06/05/19 05:20	
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.19	ng/L	06/04/19 06:51	06/05/19 05:20	,
Perfluorohexanesulfonic acid (PFHxS)	2.0	В	1.9	0.16	ng/L	06/04/19 06:51	06/05/19 05:20	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L	06/04/19 06:51	06/05/19 05:20	,
Perfluorooctanesulfonic acid (PFOS)	4.1	I	1.9	0.51	ng/L	06/04/19 06:51	06/05/19 05:20	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L	06/04/19 06:51	06/05/19 05:20	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/05/19 05:20	•
6:2 FTS	ND		9.5		ng/L		06/05/19 05:20	
8:2 FTS	ND		1.9	0.36	ng/L	06/04/19 06:51	06/05/19 05:20	•
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L	06/04/19 06:51	06/05/19 05:20	•
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
13C4 PFBA	57		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C5 PFPeA	89		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C2 PFHxA	91		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C4 PFHpA	93		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C4 PFOA	94		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C5 PFNA	96		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C2 PFDA	97		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C2 PFUnA	96		50 ₋ 150			06/04/19 06:51	06/05/19 05:20	
13C2 PFDoA	95		50 ₋ 150			06/04/19 06:51	06/05/19 05:20	
13C2 PFTeDA	67		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C3 PFBS	86		50 - 150			06/04/19 06:51	06/05/19 05:20	-
13C2 PFHxDA	27	*	50 - 150			06/04/19 06:51	06/05/19 05:20	-
1802 PFHxS	88		50 - 150			06/04/19 06:51	06/05/19 05:20	
13C4 PFOS	88		50 - 150			06/04/19 06:51	06/05/19 05:20	
d3-NMeFOSAA	95		50 - 150			06/04/19 06:51	06/05/19 05:20	

06/04/19 06:51 06/05/19 05:20

06/04/19 06:51 06/05/19 05:20

50 - 150

50 - 150

101

97

6/12/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry 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)							
		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)
320-50812-3	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)						
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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)						
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Eurofins TestAmerica, Sacramento

6/12/2019

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

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

Lab Sample ID: MB 320-298925/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 299173 Prep Batch: 298925**

	мв мв							
Analyte	Result 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-methylperfluorooctanesulfonamidoa cetic 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
•								

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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							Prep Type: Total/NA Prep Batch: 298925
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Eurofins TestAmerica, Sacramento

6/12/2019

Client Sample ID: Lab Control Sample

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QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-298925/2-A

Matrix: Water

(PFHxDA)

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

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

Client Sample ID: Lab Control S	Sample
Prep Type: To	otal/NA
Prep Batch:	298925

%Rec. 2 Limits 66 - 126
00-120
3 66 ₋ 126
3 66 - 126
8 64 - 124
8 68 - 128
0 69 - 129
3 60 - 120
2 71 - 131
72 - 132
5 68 - 128
3 73 - 133
70-100
0 63 - 123
00 400
8 68 - 128
0 67 - 127
8 68 - 128
7 67 107
7 67 - 127
66 - 126
67 - 127
72 - 132

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

6/12/2019

Lab Sample ID: LCSD 320-298925/3-A

Matrix: Water

(PFHxDA)

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 298925

Analysis Batch: 299173							Prep Ba	atch: 29	98925
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	40.0	35.3		ng/L		88	60 - 120	6	30
(PFUnA) 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-methylperfluorooctanesulfona midoacetic 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	40.0	40.1		ng/L		100	72 - 132	3	30

LCSD	LCS
%Recovery	Qua

	LCSD	LCSD	
Isotope Dilution	%Recovery	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

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry SDG: SW-1 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

uthority	Program		EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	ort, but the laboratory	is not certified by the	e governing authority. This	s list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	Э	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfonar IMeFOSAA)	nidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (PF	BS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (PF	FDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDo	A)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (P	FHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA))
EPA 537(Mod)	3535	Water	Perfluc	prohexanesulfonic acid (PF	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	prohexanoic acid (PFHxA)	
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (F	PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PF	OS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA))
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PFT	eA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTriA	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFUn.	A)

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-3 Project/Site: DWGTF_Londonderry 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

 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
 Asset ID

Job ID: 320-50812-3

SDG: SW-1 - Londonderry, NH

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TestAmerica Sacramento

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

Chain of Custody Record

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 so.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC N	9.
CI	Contact:		E-Mail:				son@te	estamencainc.com		Page:	
Co	ompany	100- 20- 1132			One	T.				Jab #:	
_	ew Hampshire Dept of Environ Services	Due Date Requested:				-		Analysis Re	quested	Proco	nution Codes
	ddress: 9 Hazen Drive	Due Date riequested.							100 HORADON NOTO	A - HC	vation Codes: M - Hexans
	ny:	TAT Requested (days):					n			B - Na	OH N-None
100	oncord late, Zip:	Standard TAT PO #: Purchase Order not required WO #: Pay using 3904					alyte			D - Niti	
	H, 03302					Standard List (20Analytes) Standard List (20Analytes)				E - Nai F - Me	DH R - Na2S2O3
	nonei 603) 271-8520					6	ist (actionary	G - Am H - Ass	chlor S - H2SO4 orbic Acid T - TSP Dodecahyd
	mail: erek.bennett⊠ des.nh.gov					S or N	lard	11111	TITITI	n J-lce	U - Acetone Vater V - MCAA
Pri	roject Name:	Project #:			_	o K	Stand			Containers C+ED	TA W - pH 4-5
T.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes (Yes	AS, S				2 - omer (specify)
L	ondonderry, NH	addwr.				Sam	D) PF				
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sesolid, Desirate/bil, BT=Tlasue, A=Air	X Field Filtered Sample (PFC IDA - (MOD) PFAS,			X Total Number	Special Instructions/Note:
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.
	NOB-052	5/21/19	1040	6	SW	M	x			500	
	NOB-053	5/21/19	1100	6	54	W	x			Sia-	
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	- 3
	NOB-055	5/21/19	1150	b	SW	W	ю			Sw	-4
	NOB-056	5/21/19	1240	6	Sw	M	×			Sw.	5
	NOB-057	5/21/19	1320	6	SW	W	×			Sw	-9
	Field Dlank	5/21/19	1325	6	الا	M	×			Lab	supplied Alak
P	Possible Hazard Identification					Sa	mple D	isposal (A fee may be	assessed if samples are ret	ained long	er than 1 month)
Di	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	on B - Unkn	own — F	Radiological		Sp	Reti	urn To Client Structions/QC Requireme	Disposal By Lab A	rchive For	Months
_	mpty Kit Relinquished by:		Date:			Time:		00.1	Method of Shipment:		
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time 5/22/19	141	42 Company NHDES
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19	14:	Company
Re	elinquisheg by:	Date/Time:	17.1-		Company		Receive	DOIN COOL	Date/June 5/3//		20 STA-ST
2	Custody Seals Intact: Custody Seal No.: 7410	-0%					Cooler 1	emperature(s) °C and Other R		, ,	00 1000
_	containers labeled as "NOB_S4" 1	1	1	^	1		_	./		1 -	Ver: 08/04/2016

6/12/2019

Page 16 of 17

Job Number: 320-50812-3

SDG Number: SW-1 - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported:

06-Jun-19 08:17

REPORT OF ANALYSIS 119052561.03

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Surface Water, NOB 052

sampled Date: 21-May-2019 10:40

SM 4500 NO2B

NH

Nitra	te
-------	----

Nitrite-N

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	Method	<u>Analyst</u>

mg/L

05/22/2019 16:50

Reporting

0.01

< 0.01

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.52	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Donorting

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

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A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)							-				+											-									
				<u> </u>		_		_		==	+	_					ject	into	orma	atio	n							_			
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	les Need Prior Ame Day Turnard One Day Turnard Two Day Turnard Two Day Turnard Two Day Turnard Normal Turnard	und und und und	'al	Sampler:			Project #: 95160.00 Project Name: London Levy & Quality Eval Town/Site: London devity Sampler: London devity Company: Alabis - Group Bid Reference: Project Manager: Mark Hende Report To: Mark Hende Invoice To: Hugaris 72 Phone: 603 724-415 E-mail: Microlessone					1/545			Project Manager: Mark Hendersen Report To: Mark Hendersen Invoice To: Hugarts Payable Phone: 603-224-4182 E-mail: Menderson Crobs group.com			<u> </u>													
Sample Informa	ition	_=		٧	OCs			S	voc	s			Pet	trole	um			Ме	tals		٧	Vet (Che	nist	ry / I	Inorg	anio	s		ı	
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Paramater only:		1.1-Luxatile / EUB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1																							_T	ĺ		
telinquished by: telinquished by:	Date/Time: 5/21/19 Date/Time: Date/Time:	15-4	5	Received by: 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					ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo																	
								Receipt Temperature:C				Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM-030916																			



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392 Lab ID: 19050392

29 Hazen Drive, PO Box 95

Project Number: **DWGTF Londonderry** Date: 6/24/2019

Concord NH 03302-0

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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.< td=""></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

Analytical Results

Lab ID:

Date:

19050392

6/25/2019

NHDES MtBE Remediation Bureau

29 Hazen Drive, PO Box 95

Derek S. Bennett

Control #: 19050392

Project Number: DWGTF Londonderry

Project Name: Concord NH 03302-0 MTBE_01

Project Location: SW-1

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19050392-004	NOB_052				5/21/20	19 10:40:00 AM	Grou	ndwater
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroe	ethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrach	loroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroeth	ane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroeth	ene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropro	pene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorob	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorop	propane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorob	enzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorober		SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroeth	ane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropro	pane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorob		SW 8260C	< 1 ug/L			5/31/2019		LauraB
1,3,5-Trimethyll	benzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorober	nzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropro	pane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorober	nzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropro		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	e	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Ethoxy-2-Met	hyl Propane (ETBE)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Hexanone		SW 8260C	< 12 ug/L			5/31/2019	12	LauraB
	ethyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
-	ethyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Prop	• • • •	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	, ,	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltolue		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Pen		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		LauraB
Acrylonitrile		SW 8260C	< 5 ug/L			5/31/2019		LauraB
Benzene		SW 8260C	< 1 ug/L	5		5/31/2019		LauraB
Bromobenzene		SW 8260C	< 1 ug/L			5/31/2019	1 1	LauraB
Bromochlorome		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichloron		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
		211 0=300	∞9, =				•	

Page 1 of 3



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

19050392-004	NOB_052					ime Sampled:	Matrix	
	1105_002				5/21/20	19 10:40:00 AM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane	;	SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfid	le	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrach	nloride	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-Dichlor	oethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichlor	opropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloro	methane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromometha	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoro	omethane	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 Etl	her	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobuta	adiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenze	ne	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 Chlo	oride	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	Э	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
N-Propylbenze	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofurai	n	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-Dich	loroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dich	loropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene)	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluoror	nethane	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
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.



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

TestAmerica

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

orlette.johnson@testamericainc.com

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

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4.0

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, NH

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

Qualifiers

1.7		N/I	C
ш	U	IVI	J

RPD

TEF

TEQ

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

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

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 1.6° 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

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

Client Sample ID: NOB_053

Lab Sample ID: 320-50812-4

Analyte	Result Qualifier	RL	MDL U	Jnit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.5 B	1.9	0.33 n	ıg/L		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.2	1.9	0.46 n	ıg/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA)	8.0	1.9	0.55 n	ıg/L	1	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.4	1.9	0.24 n	ıg/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	20	1.9	0.80 n	ıg/L	1	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	1.1 J	1.9	0.26 n	ıg/L	1	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.4	1.9	0.19 n	ig/L	1	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7 B	1.9	0.16 n	ıg/L	1	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.0 I	1.9	0.51 n	ıa/L	1	EPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

Client Sample ID: NOB_053

Date Collected: 05/21/19 11:00 Date Received: 05/31/19 09:20

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

M2-8:2 FTS

d3-NMeFOSAA

Lab Sample ID: 320-50812-4

Matrix: Water

Method: EPA 537(Mod) - PFAS Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.5	В	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		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	В	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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L		06/04/19 06:51	06/05/19 05:28	1
6:2 FTS	ND		9.5		ng/L		06/04/19 06:51	06/05/19 05:28	•
8:2 FTS	ND		1.9	0.35	ng/L		06/04/19 06:51	06/05/19 05:28	
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 Fa
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	
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	
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

6/12/2019

06/04/19 06:51 06/05/19 05:28

06/04/19 06:51 06/05/19 05:28

06/04/19 06:51 06/05/19 05:28

06/04/19 06:51 06/05/19 05:28

06/04/19 06:51 06/05/19 05:28

06/04/19 06:51 06/05/19 05:28

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50 - 150

50 - 150

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31 *

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94

101

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Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50812-4	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Surrogato Logond									

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

Eurofins TestAmerica, Sacramento

6/12/2019

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry 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	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 299173 Prep Batch: 298925 MB MB

Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MB	MB							
Isotope Dilution	%Recovery	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

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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 **Client Sample ID: Lab Control Sample**

Matrix: Water Prep Type: Total/NA **Analysis Batch: 299173 Prep Batch: 298925** Spike LCS LCS %Rec. Analyte D %Rec Added Result Qualifier Unit Limits Perfluorobutanoic acid (PFBA) 40.0 38.7 ng/L 97 70 - 130

Eurofins TestAmerica, Sacramento

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Lab Sample ID: LCS 320-298925/2-A

Matrix: Water

Analysis Batch: 299173

Perfluoro-n-hexadecanoic acid

(PFHxDA)

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 298925

Analysis Baton. 200110	Spike	LCS L	.cs		%Rec.
Analyte	Added	Result C	Qualifier Unit	D %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	40.0	33.3	ng/L	83	60 - 120
(PFUnA)					
Perfluorododecanoic acid	40.0	36.7	ng/L	92	71 - 131
(PFDoA)					
Perfluorotridecanoic acid	40.0	36.5	ng/L	91	72 - 132
(PFTriA) Perfluorotetradecanoic acid	40.0	34.2	ng/L	85	68 - 128
(PFTeA)	40.0	34.2	ng/L	05	00 - 120
Perfluorobutanesulfonic acid	35.4	34.8	ng/L	98	73 - 133
(PFBS)			Ū		
Perfluorohexanesulfonic acid	36.4	32.8	ng/L	90	63 - 123
(PFHxS)					
Perfluoroheptanesulfonic Acid	38.1	39.3	ng/L	103	68 - 128
(PFHpS)	27.4	20.0		00	07 407
Perfluorooctanesulfonic acid	37.1	36.6	ng/L	99	67 - 127
(PFOS) Perfluorodecanesulfonic acid	38.6	35.8	ng/L	93	68 - 128
(PFDS)	00.0	00.0	119/2	00	00-120
N-methylperfluorooctanesulfona	40.0	38.9	ng/L	97	67 - 127
midoacetic acid (NMeFOSAA)			-		
6:2 FTS	37.9	39.4	ng/L	104	66 - 126
8:2 FTS	38.3	39.6	ng/L	103	67 - 127

40.0

38.8

ng/L

(FFIXDA)	100	LCS	
Isotope Dilution	%Recovery		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
1802 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

72 - 132

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

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

Matrix: Water						ID: Lat	Prep Type: Total/NA Prep Batch: 298925				
Analysis Batch: 299173	Snika	I CED	LCSD				Prep Ba	atch: 29	98925 RPD		
Analyte	Spike Added	_	Qualifier	Unit	D	%Rec	MRec.	RPD	Limit		
			Qualifier								
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	40.0	35.3		ng/L		88	60 - 120	6	30		
(PFUnA)											
Perfluorododecanoic acid	40.0	37.2		ng/L		93	71 - 131	1	30		
(PFDoA)											
Perfluorotridecanoic acid	40.0	36.0		ng/L		90	72 - 132	1	30		
(PFTriA)											
Perfluorotetradecanoic acid	40.0	36.1		ng/L		90	68 - 128	6	30		
(PFTeA)											
Perfluorobutanesulfonic acid	35.4	36.2		ng/L		102	73 - 133	4	30		
(PFBS)											
Perfluorohexanesulfonic acid	36.4	33.4		ng/L		92	63 - 123	2	30		
(PFHxS)	20.4	40.4		/I		405	00 400	0	20		
Perfluoroheptanesulfonic Acid	38.1	40.1		ng/L		105	68 - 128	2	30		
(PFHpS)	37.1	38.5		na/l		104	67 - 127	5	30		
Perfluorooctanesulfonic acid	31.1	36.5		ng/L		104	01 - 121	5	30		

35.1

39.7

36.3

39.1

40.1

ng/L

ng/L

ng/L

ng/L

ng/L

38.6

40.0

37.9

38.3

40.0

(PFHxDA)

	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 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

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

99

96

102

100

30

30

30

30

30

8

3

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

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

Client Sample ID: NOB_053 Lab Sample ID: 320-50812-4

Date Collected: 05/21/19 11:00 **Matrix: Water** Date Received: 05/31/19 09:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry SDG: SW-2 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

u thority NAB	Program DoD		EPA Region	Identification Number	Expiration Date 01-20-21			
NAD	טטט			L2400	01-20-21			
• ,	•	ort, but the laboratory	is not certified by the	e governing authority. This	s list may include analytes for whic			
the agency does not of Analysis Method	Prep Method	Matrix	Analyte	<u> </u>				
EPA 537(Mod)	3535	Water	6:2 FT					
EPA 537(Mod)	3535	Water	8:2 FT	S				
EPA 537(Mod)	3535	Water	N-meti	nylperfluorooctanesulfona	midoacetic			
			`	lMeFOSAA)				
EPA 537(Mod)	3535	Water		probutanesulfonic acid (PF	FBS)			
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)				
EPA 537(Mod)	3535	Water	Perfluc	Perfluorodecanesulfonic acid (PFDS)				
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)				
EPA 537(Mod)	3535	Water	Perfluorododecanoic acid (PFDoA)					
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (F	PFHpS)			
EPA 537(Mod)	3535	Water	Perfluoroheptanoic acid (PFHpA)					
EPA 537(Mod)	3535	Water	Perfluc	Perfluorohexanesulfonic acid (PFHxS)				
EPA 537(Mod)	3535	Water	Perfluorohexanoic acid (PFHxA)					
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (PFHxDA)			
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)				
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PF	FOS)			
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)				
EPA 537(Mod)	3535	Water		Perfluoropentanoic acid (PFPeA)				
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PF	ГеА)			
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)					
EPA 537(Mod)	3535	Water		proundecanoic acid (PFUr	,			

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

Job ID: 320-50812-4 Project/Site: DWGTF_Londonderry 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

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	

Job ID: 320-50812-4

SDG: SW-2 - Londonderry, NH

TestAmerica Sacramento

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

Chain of Custody Record

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 30.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC	NO.
CI	lent Contact: erek Bennett	Phone: 603 - 224			E-M		son@te	estamencainc.com		Page	
Co	ompany	1001 KA-1	4187		One	T.	3011 € 10			Job #	
_	ew Hampshire Dept of Environ Services	Due Date Request	led:			-		Analysis Re	quested	Dres	ervation Codes:
	9 Hazen Drive	Due Date Request	te date requesico:						100 HORADOOO AAAA	A-H	
	ny:	TAT Requested (d	lays):				n			B - N	aOH N - None
300	oncord late, Zip:	Standard TAT					(Yes or No) s or No) Standard List (2'DAnalytes)			D - N	n Acetate Q - AsNaO2 itric Acid P - Na2O4S
	H, 03302	PO#:				41	OAn	320-50812 Chain of (F-M	
	nonei 603) 271-8520	Purchase Orde	r not require	d		6	ist (actody		mchlor S - H2SO4 scorbic Acid T - TSP Dodecahyd
	mail: erek.bennett © des.nh.gov	WO#: Pay using 3004				S or N	lard	11111	TITITI	1- los	U - Acetone Water V - MCAA
Pri	roject Name:	Pay using 3904 Project #:			_	o K	Stand			Containers K-E	DTA W - pH 4-5
IT.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes Yes	AS, S			Other	
Lo	ondonderry, NH	SSOW#.			Sam ISD (ered Sample (MS/MSD (Yes			to Other		
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewster, Sesolid, Desireste/bil, BT=Tlasue, A=Air	FE	PFC IDA - (MO			X Total Number	Special Instructions/Note:
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.
	NOB-052	5/21/19	1040	6	SW	M	x			1000	s ~ [
	NOB-053	5/21/19	1100	6	54	W	x			Sia-	
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	-3
	NOB-055	5/21/19	1150	b	SW	W	ю			Su	, -4
	NOB-056	5/21/19	1240	6	Sw	M	×			5w	-5-
	NOB-057	5/21/19	1320	6	SW	W	×			Su	,-9
	Field Dlank	5/21/19	1325	6	الماز	M	×			Lat	supplied Alank
P	Possible Hazard Identification					Sa	mple D	isposal (A fee may be	assessed if samples are rel	ained lor	ger than 1 month)
D	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	-Hazard Flammable Skin Irritant Poison B Unknown Radiological					Reli ecial Ins	urn To Client Structions/QC Requireme	Disposal By Lab	Archive Fo	r Months
_	mpty Kit Relinquished by:	Date:				Time:		00.1	Method of Shipment:		
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time: 5/22/15	14	42 Company NHDES
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19		15 Company
Re	elinquishegiby:	Date/Time:	17.1-		Company		Receive	DOIN COOL	Date/Time /		720 GTA-ST
2	Custody Seals Intact: Custody Seal No.: 7410	-08					Cooler 1	emperature(s) °C and Other R		,	2 24 3
_	containers labeled as "NOB_S4" 1	1	7.	^	Λ.					7 -	Ver: 08/04/2016

6/12/2019

Page 16 of 17

Job Number: 320-50812-4

SDG Number: SW-2 - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported:

06-Jun-19 08:17

REPORT OF ANALYSIS

119052561.04

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Surface Water, NOB 053

sampled Date: 21-May-2019 11:00

Method

SM 4500 NO2B

Analyst

NH

		te	

Analyte

Nitrite-N

Analyce	KCJuit	<u>Limit</u>	Oilies	Analyzea	rictiou	Allalyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

Unite

mg/L

Analyzed

05/22/2019 16:50

Reporting

<u>Limit</u>

0.01

Decult

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.25	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Donorting

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

A Division of Noteby Analytical LLC

A Division of Nelson Analytical, LLC

Turnaround Requirements (check one)						-				+											-										
				<u> </u>		_		_		==	+	_					ject	into	orma	atio	n							_			
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	les Need Prior Ame Day Turnard One Day Turnard Iwo Day Turnard Tee Day Turnard Normal Turnard	und und und und	'al	,	Project #: 95/60. Project Name: London Jerry Town/Site: London Jerry Sampler: London Jerry Company: Alabis —					7/54				Project Manager: Mark Henderson Report To: Mark Henderson Invoice To: Housets Payable Phone: 603-124-4182 E-mail: MHenderson Crobbs reports.					<u> </u>												
Sample Informa	ition	_=		٧	OCs			S	voc	s			Pet	trole	um			Ме	tals		٧	Vet (Che	nist	ry / I	Inorg	anio	s		ı	
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Parameter only:		1.1-Luxatile / EUB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1						Ш																	_T			
telinquished by: telinquished by:	Date/Time: 5/21/19 Date/Time: Date/Time:	15-4	5	Receiv	eceived by:					Receipt Conditions (laboratory use only): Laboratory Supplied Containers (Yes / No Containers Intact/Properly Labeled? Yes / No Were samples delivered on ice (Yes / No				y): PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?																	
	· ··-		[Receip	t Temp	erature	:	<u>آ_</u> د	-/				Does a	orice o	quote a SAMI	pply?_ PLES	UBM	es <u>//</u> IISSI	_ No ONF¢	RM-	03091	ß	



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





03302-0

317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050392

19050392

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry Date: 6/24/2019

Lab ID:

Concord NH

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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.< td=""></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"



Analytical Results

Lab ID:

Date:

19050392

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392

Project Number: DWGTF Londonderry 29 Hazen Drive, PO Box 95

Project Name: Concord NH 03302-0 MTBE_01

Project Location: SW-2

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	atrix
19050392-005	NOB_053				5/21/20	19 11:00:00 AM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachlo	oroethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroet		SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachlo	oroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroet	thane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroetha	ane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethe	ene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloroprop	pene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobe	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropi	ropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobe	enzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylb	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-C	Chloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoetha	ane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichloroben	zene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroetha	ane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloroprop	pane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobe	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylb	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichloroben	zene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloroprop	pane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichloroben	zene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloroprop	pane	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-Meth	nyl 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-Me	thyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Me	thyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Prop	anol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltolue	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Penta	anone	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
Bromochlorome	thane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Bromodichlorom	ethane	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

Page 1 of 3



Sample	Client Sample Id	entity			Start Date/T	ime Sampled:	Matrix		
19050392-005	NOB_053			<u> </u>	5/21/20	19 11:00:00 AM	Grou	ndwater	
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys	
Bromomethane		SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB	
Carbon Disulfid	e	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
Carbon Tetrach	loride	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-Dichloro	pethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB	
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB	
Dibromochloror	nethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB	
Dibromomethar	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
Ethylbenzene		SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB	
Hexachlorobuta	diene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB	
Isopropylbenze	ne	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 Chlo	ride	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-Propylbenzer	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
O-Xylene		SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB	
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
Styrene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB	
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB	
Tetrahydrofurar	1	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-Dichl	oroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB	
Trans-1,3-Dichl	oropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB	
Trichloroethene		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB	
Trichlorofluoron	nethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB	
Vinyl Chloride		SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB	



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.



Environment Testing TestAmerica

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

LINKS

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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.

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Eurofins TestAmerica, Sacramento 6/12/2019

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

Qualifiers

10	- 14	
L	, IV	IO.

RL

RPD

TEF **TEQ**

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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

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 1.6° 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

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry 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	В	1.8	0.32	ng/L		_	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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

Client Sample ID: NOB_054

Date Collected: 05/21/19 11:15 Date Received: 05/31/19 09:20

d3-NMeFOSAA

M2-6:2 FTS

M2-8:2 FTS

Lab Sample ID: 320-50812-5

Matrix: Water

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.7	В	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	1	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	В	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-methylperfluorooctanesulfonamidoa cetic 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
1802 PFHxS	89		50 ₋ 150				06/04/19 06:51	06/05/19 05:36	1
13C4 PFOS	87		50 ₋ 150					06/05/19 05:36	1

06/04/19 06:51 06/05/19 05:36

06/04/19 06:51 06/05/19 05:36

06/04/19 06:51 06/05/19 05:36

50 - 150

50 - 150

50 - 150

99

104

97

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50812-5	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Surrogato Logond									

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

Page 7 of 17

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

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

ab Sample ID: MB 320-298925/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Patch, 200472	Bron Botohi 200025

Ma **Analysis Batch: 299173 Prep Batch: 298925** MB MB ac 1

l Dil Fac	Analyzed	Prepared	D	Unit	MDL	RL	Qualifier	Result	Analyte
	06/05/19 04:56	06/04/19 06:51		ng/L	0.35	2.0	J	0.353	Perfluorobutanoic acid (PFBA)
:56	06/05/19 04:56	06/04/19 06:51		-		2.0		ND	Perfluoropentanoic acid (PFPeA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.58	2.0		ND	Perfluorohexanoic acid (PFHxA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.25	2.0		ND	Perfluoroheptanoic acid (PFHpA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.85	2.0		ND	Perfluorooctanoic acid (PFOA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.27	2.0		ND	Perfluorononanoic acid (PFNA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.31	2.0		ND	Perfluorodecanoic acid (PFDA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	1.1	2.0		ND	Perfluoroundecanoic acid (PFUnA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.55	2.0		ND	Perfluorododecanoic acid (PFDoA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	1.3	2.0		ND	Perfluorotridecanoic acid (PFTriA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.29	2.0		ND	Perfluorotetradecanoic acid (PFTeA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.20	2.0		ND	Perfluorobutanesulfonic acid (PFBS)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.17	2.0	J	0.323	Perfluorohexanesulfonic acid (PFHxS)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.19	2.0		ND	Perfluoroheptanesulfonic Acid (PFHpS)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.54	2.0		ND	Perfluorooctanesulfonic acid (PFOS)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.32	2.0		ND	Perfluorodecanesulfonic acid (PFDS)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	1.2	2.0		ND	N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)
:56	06/05/19 04:56	06/04/19 06:51		ng/L	2.0	10		ND	6:2 FTS
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.38	2.0		ND	8:2 FTS
:56	06/05/19 04:56	06/04/19 06:51		ng/L	0.89	2.0		ND	Perfluoro-n-hexadecanoic acid
4:	06/05/19 04	06/04/19 06:51		ng/L	0.38	2.0		ND	6:2 FTS 8:2 FTS

(DELLyDA)				ŭ		
(PFHxDA)	MB	МВ				
Isotope Dilution	%Recovery	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
1802 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							Prep Type. Total/NA
Analysis Batch: 299173							Prep Batch: 298925
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Client Sample ID: Lab Control Sample

Page 8 of 17

QC Sample Results

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCS 320-298925/2-A

Matrix: Water

(PFHxDA)

Analysis Batch: 299173

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

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

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

Prep Type: Total/NA
Prep Batch: 298925
%Rec.

Analysis Butch. 200170	Spike	LCS	LCS		%Rec.
Analyte	Added	Result	Qualifier Unit	D %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-methylperfluorooctanesulfona midoacetic 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	40.0	38.8	ng/L	97	72 - 132

	LUS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Client: New Hampshire Dept of Environmental Serv

Lab Sample ID: LCSD 320-298925/3-A

Matrix: Water

(PFHxDA)

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

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

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Pron Ratch: 298925

Analysis Batch: 299173						Prep B	atch: 29	
	Spike		LCSD			%Rec.		RPD
Analyte	Added		Qualifier	Unit	D %Re		RPD	Limit
Perfluorobutanoic acid (PFBA)	40.0	40.5		ng/L	10	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	40.0	37.5		ng/L	94	4 66 ₋ 126	1	30
Perfluorohexanoic acid (PFHxA)	40.0	36.9		ng/L	92	2 66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	39.2		ng/L	98	8 66 - 126	0	30
Perfluorooctanoic acid (PFOA)	40.0	39.0		ng/L	9.	7 64 ₋ 124	5	30
Perfluorononanoic acid (PFNA)	40.0	40.7		ng/L	10:	2 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	3 60 - 120	6	30
Perfluorododecanoic acid (PFDoA)	40.0	37.2		ng/L	9:	3 71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)	40.0	36.0		ng/L	90		1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	36.1		ng/L	90		6	30
Perfluorobutanesulfonic acid (PFBS)	35.4	36.2		ng/L	102		4	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.4		ng/L	92		2	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.1		ng/L	109		2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L	104		5	30
Perfluorodecanesulfonic acid (PFDS)	38.6	35.1		ng/L	9	l 68 ₋ 128	2	30
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	39.7		ng/L	99	9 67 - 127	2	30
6:2 FTS	37.9	36.3		ng/L	90	66 - 126	8	30
8:2 FTS	38.3	39.1		ng/L	102	2 67 - 127	1	30
Perfluoro-n-hexadecanoic acid	40.0	40.1		ng/L	100	72 - 132	3	30

LCSD	LCSD
------	------

	LCSD	LCSD	
Isotope Dilution	%Recovery	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

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

Client Sample ID: NOB_054

Lab Sample ID: 320-50812-5 Date Collected: 05/21/19 11:15 Date Received: 05/31/19 09:20

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry SDG: SW-3 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

uthority NAB	Program DoD		EPA Region	Identification Number	Expiration Date 01-20-21			
VAD	טטט			L2400	01-20-21			
,	•	rt, but the laboratory	is not certified by the	e governing authority. This	list may include analytes for whic			
the agency does not of Analysis Method	Prep Method	Matrix	Analyte	<u> </u>				
EPA 537(Mod)	3535	Water	6:2 FT					
EPA 537(Mod)	3535	Water	8:2 FT					
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfonan	nidoacetic			
EPA 537(Mod)	3535	Water	`	lMeFOSAA) probutanesulfonic acid (PF	BS)			
EPA 537(Mod)	3535	Water		probutanoic acid (PFBA)				
EPA 537(Mod)	3535	Water		prodecanesulfonic acid (PF	DS)			
EPA 537(Mod)	3535	Water		prodecanoic acid (PFDA)	-,			
EPA 537(Mod)	3535	Water		prododecanoic acid (PFDo	A)			
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (P	FHpS)			
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA)	, ,			
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)			
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)	·			
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (F	PFHxDA)			
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)				
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PF	OS)			
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)				
EPA 537(Mod)	3535	Water	Perfluoropentanoic acid (PFPeA)					
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PFT	eA)			
EPA 537(Mod)	3535	Water	Perfluorotridecanoic acid (PFTriA)					
EPA 537(Mod)	3535	Water	Perfluc	proundecanoic acid (PFUn	A)			

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-5 Project/Site: DWGTF_Londonderry 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

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Asset ID

 320-50812-5
 NOB_054
 Water
 05/21/19 11:15
 05/21/19 09:20

2

Job ID: 320-50812-5

SDG: SW-3 - Londonderry, NH

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Q

40

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14

15

TestAmerica Sacramento

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

Chain of Custody Record

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 so.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC N	9.
CI	lent Contact: erek Bennett	Phone: 603 - 224			E-M		son@te	estamencainc.com		Page:	
Co	ompany	1001 KA-1	4187		One	T.	3011 € 10			Jab #:	
_	ew Hampshire Dept of Environ Services	Due Date Request	lad:			-		Analysis Re	quested	Proco	nution Codes
	ddress: 9 Hazen Drive	Due Date Request	ieo:						100 HORADON NOTO	A - HC	vation Codes: M - Hexans
	ny:	TAT Requested (d	lays):				n			B - Na	OH N-None
100	oncord late, Zip:	Standard TAT					alyte			D - Niti	
	H, 03302	PO#:				41	OAn	320-50812 Chain of (E - Nai F - Me	DH R - Na2S2O3
	nonei 603) 271-8520	Purchase Orde	r not require	d		6	ist (actionary	G - Am H - Ass	chlor S - H2SO4 orbic Acid T - TSP Dodecahyd
	mail: erek.bennett@des.nh.gov	WO#: Pay using 3904				S or N	Standard List (2'O'Analytes)	11111	TITITI	n J-lce	U - Acetone Vater V - MCAA
Pri	roject Name:	Project #:			_	o K	Stand			Containers C+ED	TA W - pH 4-5
T.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes (Yes	AS, S			Other:	2 - omer (specify)
L	ondonderry, NH	accivir.				Sam	D) PF			ō	
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sesolid, Desirate/bil, BT=Tlasue, A=Air	X Field Filtered Sample (PFC IDA - (MOD) PFAS,			X Total Number	Special Instructions/Note:
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.
	NOB-052	5/21/19	1040	6	SW	M	x			500	
	NOB-053	5/21/19	1100	6	54	W	x			Sia-	
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	- 3
	NOB-055	5/21/19	1150	b	SW	W	ю			Sw	-4
	NOB-056	5/21/19	1240	6	Sw	M	×			Sw.	5
	NOB-057	5/21/19	1320	6	SW	W	×			Sw	-9
	Field Dlank	5/21/19	1325	6	الا	M	×			Lab	supplied Alak
P	Possible Hazard Identification	П				Sa	mple D	isposal (A fee may be	assessed if samples are ret	ained long	er than 1 month)
Di	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	on B - Unkn	own — F	Radiological		Sp	Reti	urn To Client Structions/QC Requireme	Disposal By Lab A	rchive For	Months
_	mpty Kit Relinquished by:		Date:			Time:		00.1	Method of Shipment:		
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time 5/27/19	141	42 Company NHDES
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19	14:	Company
Re	elinquisheg by:	Date/Time: Company						DOIN COOL	Date/June 5/3//		20 STA-ST
2	Custody Seals Intact: Custody Seal No.: 7410	-0%					Cooler 1	emperature(s) °C and Other R		, ,	00 1000
_	containers labeled as "NOB_S4" 1	1	1	^	1		_	./		1 -	Ver: 08/04/2016

6/12/2019

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Client: New Hampshire Dept of Environmental Serv

Job Number: 320-50812-5

SDG Number: SW-3 - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported:

06-Jun-19 08:17

REPORT OF ANALYSIS 119052561.05

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Surface Water, NOB 054

sampled Date: 21-May-2019 11:15

Mathad

SM 4500 NO2B

Analyst

NH

Nitra	te
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Analyte

Nitrite-N

Allalyte	Result	<u>Limit</u>	UIIILS	Allalyzeu	Meulou	AllalySL
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
Nitrite						
Analyte	<u>Result</u>	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

Hnite

mg/L

Analyzed

05/22/2019 16:50

Reporting

0.01

Decult

< 0.01

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	Reporting Limit	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.23	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Donorting

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

A Division of Noteby Analytical LLC

A Division of Nelson Analytical, LLC

Turnaround Requirements	(check one	<u>,,</u>					-				+											-									
				<u> </u>		_		_		==	+	Project Information																			
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	les Need Prior Ame Day Turnard One Day Turnard Iwo Day Turnard Tee Day Turnard Normal Turnard	und und und und	'al	,	Pro ject Tow Sa Con Refe	mpa	ler: iny:	7	ريهان <u>٠</u> اير	e di		100		.(1,	, E	VC	<u> </u>	F	Proj€	ect l Re Inv	Man epo voic Pt E-	age rt To e To none mai	r: [// p: _/_ p: _/ : _/_	lar l Fu 03 He	k 0.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	He. He My- erso	n A	12 x 5 /2	ble	vo 49.	<u> </u>
Sample Information				VOCs SVOCs						Petroleum M						Ме	Metals Wet Chemistry / Inorganics														
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Parameter only:		1.1-Luxatile / EUB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1						Ш																	_T			
telinquished by: telinquished by:	Date/Time: 5/21/19 Date/Time: Date/Time:	15-4	5	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					ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?Yes															
											Receip	t Temp	erature	:	<u>آ_</u> د	-/				Does a price quote apply? Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916											



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392 Lab ID: 19050392

29 Hazen Drive, PO Box 95

Project Number: **DWGTF Londonderry** Date: 6/24/2019

Concord NH 03302-0

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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 E	Blank has hit for Toluene but sample	s all <dl.< td=""><td></td><td></td></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"



Analytical Results

Lab ID:

Date:

19050392

6/25/2019

NHDES MtBE Remediation Bureau

Control #: 19050392

29 Hazen Drive, PO Box 95

Derek S. Bennett

Project Number: DWGTF Londonderry

Concord

NH 03302-0

Project Name: MTBE_01

Project Location: SW-3

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	ıtrix
19050392-006	NOB_054				5/21/20	19 11:15:00 AM	Groundwater	
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachloroethane		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroe	ethane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrach	loroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroeth	ane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroeth	ene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropro	pene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorob	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorop	ropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorob	enzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	ane	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorober	nzene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroeth	ane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloropro	pane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorob	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethyll	benzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorober	nzene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloropro	pane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorober	nzene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloropro	pane	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-Met	hyl 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-Me	ethyl 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-Prop	oanol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene	•	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltolue	ene	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
Bromodichloron	Bromodichloromethane		< 0.6 ug/L	3		5/31/2019	0.6	LauraB
		SW 8260C SW 8260C	< 1 ug/L	4		5/31/2019	1	LauraB
			ŭ					

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Sample	Client Sample Id	entity			Start Date/T	ime Sampled:	Ma	atrix
19050392-006	NOB_054				5/21/20	19 11:15:00 AM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane		SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Carbon Disulfid		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Carbon Tetrach	loride	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-Dichloro	pethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloro	opropene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethar	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobuta	idiene	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-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofurar	1	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
Trichlorofluoron	nethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride		SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB



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.



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

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Toxicity Equivalent Quotient (Dioxin)

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.
В	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.

TEQ

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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

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 1.6° 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

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

Client Sample ID: NOB_055

Lab Sample ID: 320-50812-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.2	В	1.9	0.33	ng/L		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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

Client Sample ID: NOB_055

Lab Sample ID: 320-50812-6 Date Collected: 05/21/19 11:50

Matrix: Water Date Received: 05/31/19 09:20

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.2	В	1.9	0.33	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluoropentanoic acid (PFPeA)	3.9		1.9	0.47	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluorohexanoic acid (PFHxA)	4.5		1.9	0.55	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluoroheptanoic acid (PFHpA)	2.7		1.9	0.24	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluorooctanoic acid (PFOA)	9.8		1.9	0.81	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluorononanoic acid (PFNA)	0.82	J	1.9	0.26	ng/L		06/04/19 06:51	06/05/19 05:44	•
Perfluorodecanoic acid (PFDA)	0.35	J	1.9	0.30	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/04/19 06:51	06/05/19 05:44	•
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	В	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	,
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/04/19 06:51	06/05/19 05:44	•
6:2 FTS	ND		9.5		ng/L		06/04/19 06:51	06/05/19 05:44	
8:2 FTS	ND		1.9		ng/L		06/04/19 06:51	06/05/19 05:44	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/04/19 06:51	06/05/19 05:44	•
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	64		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C5 PFPeA	93		50 - 150				06/04/19 06:51	06/05/19 05:44	
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	
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	
13C2 PFDA	99		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C2 PFUnA	98		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C2 PFDoA	93		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C2 PFTeDA	68		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C3 PFBS	88		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C2 PFHxDA	34	*	50 - 150				06/04/19 06:51	06/05/19 05:44	
18O2 PFHxS	91		50 - 150				06/04/19 06:51	06/05/19 05:44	
13C4 PFOS	86		50 - 150				06/04/19 06:51	06/05/19 05:44	
d3-NMeFOSAA	94		50 - 150				06/04/19 06:51	06/05/19 05:44	
M2-6:2 FTS	104		50 - 150					06/05/19 05:44	
	97		50 ₋ 150					06/05/19 05:44	1

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50812-6	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/12/2019

13C2 PFHxDA

1802 PFHxS

13C4 PFOS

M2-6:2 FTS

d3-NMeFOSAA

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry 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	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 299173 Prep Batch: 298925 MB MB

Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MB	MB							
Isotope Dilution	%Recovery	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

M2-8:2 FTS 100 50 - 150 06/04/19 06:51 06/05/19 04:56 Lab Sample ID: LCS 320-298925/2-A **Client Sample ID: Lab Control Sample**

57

88

86

93

104

Matrix: Water Prep Type: Total/NA **Analysis Batch: 299173 Prep Batch: 298925**

50 - 150

50 - 150

50 - 150

50 - 150

50 - 150

Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Unit D %Rec Perfluorobutanoic acid (PFBA) 40.0 38.7 ng/L 97 70 - 130

Eurofins TestAmerica, Sacramento

06/04/19 06:51 06/05/19 04:56

06/04/19 06:51 06/05/19 04:56

06/04/19 06:51 06/05/19 04:56

06/04/19 06:51 06/05/19 04:56

06/04/19 06:51 06/05/19 04:56

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Lab Sample ID: LCS 320-298925/2-A

Matrix: Water

Analyte

Analysis Batch: 299173

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

(PFDS)

6:2 FTS

8:2 FTS

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

LCS LCS

Result Qualifier Unit

Spike

Added

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

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

D %Rec

93

97

104

103

97

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

Prep i	ype: Total/NA
Prep	Batch: 298925
%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	40.0	33.3	ng/L	83	60 - 120	
(PFUnA)						
Perfluorododecanoic acid	40.0	36.7	ng/L	92	71 - 131	
(PFDoA)						
Perfluorotridecanoic acid	40.0	36.5	ng/L	91	72 - 132	
(PFTriA)			_			
Perfluorotetradecanoic acid	40.0	34.2	ng/L	85	68 - 128	
(PFTeA)						
Perfluorobutanesulfonic acid	35.4	34.8	ng/L	98	73 - 133	
(PFBS)						
Perfluorohexanesulfonic acid	36.4	32.8	ng/L	90	63 - 123	
(PFHxS)						
Perfluoroheptanesulfonic Acid	38.1	39.3	ng/L	103	68 - 128	
(PFHpS)						
Perfluorooctanesulfonic acid	37.1	36.6	ng/L	99	67 ₋ 127	
(PFOS)						

38.6

40.0

37.9

38.3

35.8

38.9

39.4

39.6

38.8

ng/L

ng/L

ng/L

ng/L

ng/L

Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0
(TTIXDA)	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

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 Sa	mple	ID: Lab	Control Prep Type Prep Ba	pe: Tot	al/NA
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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

40.0

40.1

ng/L

100

72 - 132

3

30

(PFHxDA)			
	LCSD	LCSD	
Isotope Dilution	%Recovery	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
1802 PFHxS	84		50 - 150
13C4 PFOS	76		50 - 150
d3-NMeFOSAA	84		50 - 150
M2-6:2 FTS	96		50 - 150

80

Perfluoro-n-hexadecanoic acid

M2-8:2 FTS

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

Job ID: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

Client Sample ID: NOB_055

Lab Sample ID: 320-50812-6 Date Collected: 05/21/19 11:50

Matrix: Water

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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:

Date Received: 05/31/19 09:20

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: 320-50812-6 Project/Site: DWGTF_Londonderry SDG: SW-4- Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

uthority	Program		EPA Region	Identification Number	
NAB	DoD			L2468	01-20-21
The following analytes the agency does not o		rt, but the laboratory	is not certified by the	e governing authority. T	his list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfor NMeFOSAA)	amidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic acid (F	PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFI	DoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	(PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHp	oA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHx	۹)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic acid (F	PFOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	·
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPe	eA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (P	FTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFT	riA)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFI	InA)

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

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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

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 so.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC N	9.
CI	lent Contact: erek Bennett	Phone: 603 - 224			E-M		son@te	estamencainc.com		Page:	
Co	ompany	1001 KA-1	4187		One	T.	3011 € 10			Jab #:	
_	ew Hampshire Dept of Environ Services	Due Date Request	lad:			-		Analysis Re	quested	Proco	nution Codes
	ddress: 9 Hazen Drive	Due Date Request	ieo:						100 HORADON NOTO	A - HC	vation Codes: M - Hexans
	ny:	TAT Requested (days): Standard TAT					n			B - Na	OH N-None
100	oncord late, Zip:					(Yes or No) Standard List (2-0 Analytes)				D - Niti	
	H, 03302	PO#:				41	OAn	320-50812 Chain of (IIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIII	E - Nai F - Me	DH R - Na2S2O3
	nonei 303) 271-8520	Purchase Orde	r not require	d		6	ist (Judiody	G - Am H - Ass	chlor S - H2SO4 orbic Acid T - TSP Dodecahyd
	mail: erek.bennett⊠ des.nh.gov	WO#: Pay using 3904				S or N	lard	11111	TITITI	n J-lce	U - Acetone Vater V - MCAA
Pri	roject Name:	Project #:			_	o K	Stand			Containers C+ED	TA W - pH 4-5
T.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes (Yes	AS, S			Other:	2 - omer (specify)
L	ondonderry, NH	addwr.				Sam	D) PF			ō	
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sesolid, Desirate/bil, BT=Tlasue, A=Air	X Field Filtered Sample (PFC IDA - (MOD) PFAS,			X Total Number	Special Instructions/Note:
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.
	NOB-052	5/21/19	1040	6	SW	M	x			500	
	NOB-053	5/21/19	1100	6	54	W	x			Sia-	
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	- 3
	NOB-055	5/21/19	1150	b	SW	W	ю			Sw	-4
	NOB-056	5/21/19	1240	6	Sw	M	×			Sw.	5
	NOB-057	5/21/19	1320	6	SW	W	×			Sw	-9
	Field Dlank	5/21/19	1325	6	الا	M	×			Lab	supplied Alak
P	Possible Hazard Identification	П				Sa	mple D	isposal (A fee may be	assessed if samples are ret	ained long	er than 1 month)
Di	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	on B - Unkn	own — F	Radiological		Sp	Reti	urn To Client Structions/QC Requireme	Disposal By Lab A	rchive For	Months
_	mpty Kit Relinquished by:		Date:			Time:		00.1	Method of Shipment:		
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time 5/27/19	141	42 Company NHDES
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19	14:	Company
Re	elinquisheg by:	Date/Time:	17.1-		Company		Receive	DOIN COOL	Date/June 5/3//		20 STA-ST
2	Custody Seals Intact: Custody Seal No.: 7410	-0%					Cooler 1	emperature(s) °C and Other R		, ,	00 1000
_	containers labeled as "NOB_S4" 1	1	1	^	1		_	./		1 -	Ver: 08/04/2016

6/12/2019

Page 16 of 17

Job Number: 320-50812-6

SDG Number: SW-4- Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported:

06-Jun-19 08:17

REPORT OF ANALYSIS 119052561.06

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Surface Water, NOB 055

sampled Date: 21-May-2019 11:50

SM 4500 NO2B

NH

Nitra	te
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Nitrite-N

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	Result	<u>Reporting</u> Limit	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

mg/L

05/22/2019 16:50

Reporting

0.01

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.21	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

Donorting

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

A Division of Noteby Analytical LLC

A Division of Nelson Analytical, LLC

Turnaround Requirements	(check one	<u>,,</u>					-				+											-									
				<u> </u>		_		_		==	-	_					ject	into	orma	atio	n							_			
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	les Need Prior Ame Day Turnard One Day Turnard Two Day Turnard Two Day Turnard Two Day Turnard Normal Turnard	ay Turnaround ay Turnaround ay Turnaround ay Turnaround ay Turnaround au Turnaround al Turnaround Bid Refere			Project #: 95/60,00 roject Name: Londonderry & Orally Evel Town/Site: London destr Sampler: London destr Company: Alabis - Grove Reference:				F	Project Manager: Mark Henderson Report To: Mark Henderson Invoice To: Hugarts Payable Phone: 603-124-4182 E-mail: MHenderson Cross group.ca						<u> </u>															
Sample Informa	ition	_=		٧	OCs			S	voc	s		Petroleum M				Ме	tals		٧	Vet (Che	nist	ry / I	Inorg	anio	s		ı			
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Parameter only:		1.1-Luxatile / ELIB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	МАДЕР VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1																							_T	ĺ		
telinquished by: telinquished by:	Date/Time: 5/21/19 Date/Time: Date/Time:	15-4	5	Received by: 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					ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo																	
		[Receipt Temperature:C					Does a price quote apply?YesNo FRM-AQ-SAMPLESUBMISSIONFORM-030916																		



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392 Lab ID: 19050392

29 Hazen Drive, PO Box 95

Project Number: **DWGTF Londonderry** Date: 6/24/2019

Concord NH 03302-0

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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.< td=""></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

Analytical Results

Lab ID:

Date:

19050392

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392

Project Number: DWGTF Londonderry 29 Hazen Drive, PO Box 95

Project Name: Concord NH 03302-0 MTBE_01

Project Location: SW-4

Sample Client Sample Identi	ity			Start Date/Tir	ne Sampled:	Ma	atrix
19050392-007 NOB_055			<u> </u>	5/21/201	9 11:50:00 AM	Grou	ndwater
					Date/Time		
Parameter	Method	Result	MCL	Qualifier	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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317 Elm Street Milford, NH 03055 (603) 673-5440 Sales@chemservelab.com

Bromomethane SW 8260C < 1 ug/L	Sample	Client Sample Id	dentity			Start Date/T	ime Sampled:	Matrix	
Parameter Method Result MCL Qualifier Analyzed Analyzed RDL Analyzed Bromomethane SW 8260C < 1 ug/L 10 \$531/2019 1 Laure Carbon Disultide SW 8260C < 1 ug/L 5 \$531/2019 1 Laure Chlorobenzene SW 8260C < 1 ug/L 10 \$531/2019 1 Laure Chlorobenzene SW 8260C < 1 ug/L 10 \$531/2019 1 Laure Chloroform SW 8260C < 1 ug/L 70 \$531/2019 1 Laure Chloromethane SW 8260C < 1 ug/L 70 \$531/2019 1 Laure Cis-1,3-Dichloropropene SW 8260C < 1 ug/L 0.4 \$531/2019 1 Laure Cis-1,3-Dichloropropene SW 8260C < 1 ug/L 2 \$531/2019 0.4 Laure Cis-1,3-Dichloropropene SW 8260C < 1 ug/L 2 \$531/2019 1 Laure Dibromomethane SW 8260C < 1 ug/L 2	19050392-007	NOB_055				5/21/20	19 11:50:00 AM	Grou	ndwater
Carbon Disulfide SW 8260C < 1 ug/L 5 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 5 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 5 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 5 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 5 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 5 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 70 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 70 S31/2019 1 Laura Chlorobenzene SW 8260C < 1 ug/L 70 S31/2019 1 Laura Cis-1,2-Dichloroptenee SW 8260C < 1 ug/L 70 S31/2019 1 Laura Cis-1,2-Dichloroptenee SW 8260C < 1 ug/L 70 S31/2019 1 Laura Cis-1,3-Dichloroptenee SW 8260C < 1 ug/L 70 S31/2019 1 Laura Cis-1,3-Dichloroptenee SW 8260C < 1 ug/L 2 S31/2019 1 Laura Dibromochloromethane SW 8260C < 1 ug/L 2 S31/2019 1 Laura Dibromochloromethane SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dichloroptifluoromethane SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dichloroptifluoromethane SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dichloroptifluoromethane SW 8260C < 1 ug/L 5 S31/2019 1 Laura Di-isopropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Di-isopropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Di-isopropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Di-isopropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether SW 8260C < 1 ug/L 5 S31/2019 1 Laura Dispropyl Ether S	Parameter		Method	Result	MCL	Qualifier		RDL	Analys
Carbon Disulfide SW 8260C < 1 ug/L 531/2019 1 Laura Carbon Tetrachloride SW 8260C < 1 ug/L	Bromomethane		SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Chlorobenzene SW 8260C < 1 ug/L 100 5312019 1 Laure Chlorobethane SW 8260C < 1 ug/L 70 5312019 1 Laure Chloroform SW 8260C < 1 ug/L 70 5312019 1 Laure Chloroform SW 8260C < 1 ug/L 70 5312019 1 Laure Cis-1,2-Dichloroethane SW 8260C < 1 ug/L 70 5312019 1 Laure Cis-1,2-Dichloroethene SW 8260C < 1 ug/L 70 5312019 1 Laure Cis-1,2-Dichloropropene SW 8260C < 1 ug/L 0.4 5312019 0.4 Laure Dibromochloromethane SW 8260C < 1 ug/L 2 5312019 1 Laure Dibromochloromethane SW 8260C < 1 ug/L 2 5312019 1 Laure Dibromochloromethane SW 8260C < 1 ug/L 9 5312019 1 Laure Dibromochloromethane SW 8260C < 1 ug/L 9 5312019 1 Laure Dichlorodifluoromethane SW 8260C < 1 ug/L 9 5312019 1 Laure Dichlorodifluoromethane SW 8260C < 1 ug/L 5312019 1 Laure Dichlorodifluoromethane SW 8260C < 1 ug/L 5312019 1 Laure Dichloropropyl Ether SW 8260C < 1 ug/L 5312019 1 Laure Ethylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Ethylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Ethylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Ethylbenzene SW 8260C < 1 ug/L 5312019 1 Laure MPP-Xylene SW 8260C < 1 ug/L 5312019 1 Laure MPP-Xylene SW 8260C < 1 ug/L 5312019 1 Laure Methylene Chloride SW 8260C < 1 ug/L 5312019 1 Laure Methylene Chloride SW 8260C < 1 ug/L 5312019 1 Laure Methylene Chloride SW 8260C < 1 ug/L 5312019 1 Laure Methylene SW 8260C < 1 ug/L 5312019 1 Laure Methylene SW 8260C < 1 ug/L 5312019 1 Laure Methylene SW 8260C < 1 ug/L 5312019 1 Laure Sec-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Sec-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Sec-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenzene SW 8260C < 1 ug/L 5312019 1 Laure Tert-Butylbenz	Carbon Disulfid	e	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroethane SW 8260C < 1 ug/L	Carbon Tetrach	loride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chloroethane SW 8260C < 1 ug/L 5/31/2019 1 Laura Chloroform SW 8260C < 1 ug/L	Chlorobenzene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Cis-1,2-Dichloroethane	Chloroethane		SW 8260C	=			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	Chloroform		SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Sistration	Chloromethane		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dibromochloromethane SW 8260C	Cis-1,2-Dichloro	oethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Dibromomethane	Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dichlorodifluoromethane SW 8260C <1 ug/L Diethyl Ether SW 8260C <1 ug/L Di-Isopropyl Ether SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Person SW 8260C <1 ug/L First Per	Dibromochloror	nethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Diethyl Ether SW 8260C < 1 ug/L	Dibromomethar	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether	Dichlorodifluoro	methane	SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Ethylbenzene SW 8260C < 1 ug/L 700 5/31/2019 1 Laura Sylvaple SW 8260C < 0.5 ug/L 0.6 5/31/2019 0.5 Laura Isopropylbenzene SW 8260C < 1 ug/L 10000 5/31/2019 1 Laura M/P-Xylene SW 8260C < 1 ug/L 10000 5/31/2019 1 Laura Methylene Chloride SW 8260C < 1 ug/L 5 5/31/2019 5 Laura Naphthalene SW 8260C < 1 ug/L 140 5/31/2019 1 Laura N-Butylbenzene SW 8260C < 1 ug/L 140 5/31/2019 1 Laura N-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 1000 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 1000 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Laura Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Laura Trans-1,2-Dichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trans-1,3-Dichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 8260C < 1 ug/L 5/31/2019 1 Laura Trichlorofuene SW 82	Diethyl Ether		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Hexachlorobutadiene SW 8260C < 0.5 ug/L	Di-Isopropyl Eth	ner	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Isopropylbenzene	Ethylbenzene		SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
M/P-Xylene SW 8260C < 1 ug/L 10000 5/31/2019 1 Laura Methylene Chloride SW 8260C < 5 ug/L	Hexachlorobuta	idiene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Methylene Chloride SW 8260C < 5 ug/L 5 5/31/2019 5 Laura Naphthalene Naphthalene SW 8260C < 1 ug/L	Isopropylbenze	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Naphthalene SW 8260C < 1 ug/L 140 5/31/2019 1 Laura N-Butylbenzene SW 8260C < 1 ug/L	M/P-Xylene		SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
N-Butylbenzene SW 8260C < 1 ug/L	Methylene Chlo	ride	SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
N-Propylbenzene SW 8260C < 1 ug/L	Naphthalene		SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
O-Xylene SW 8260C <1 ug/L 10000 5/31/2019 1 Laura Sec-Butylbenzene SW 8260C <1 ug/L 5/31/2019 1 Laura Styrene SW 8260C <1 ug/L 100 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C <1 ug/L 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C <1 ug/L 5/31/2019 1 Laura Tetrachloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Tetrahydrofuran SW 8260C <1 ug/L 1300 5/31/2019 1 Laura Toluene SW 8260C <1 ug/L 1300 5/31/2019 1 Laura Toluene SW 8260C <1 ug/L 1000 5/31/2019 1 Laura Trans-1,2-Dichloroethene SW 8260C <1 ug/L 1000 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5/31/2019 1 Laura Trichlorofluoromethane	N-Butylbenzene	9	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Laura Styrene SW 8260C < 1 ug/L	N-Propylbenzer	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene SW 8260C < 1 ug/L 100 5/31/2019 1 Laura Tert-Butylbenzene SW 8260C < 1 ug/L	O-Xylene		SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Tert-Butylbenzene SW 8260C <1 ug/L 5/31/2019 1 Laura Tetrachloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Tetrahydrofuran SW 8260C <1 ug/L 1300 5/31/2019 12 Laura Toluene SW 8260C <1 ug/L 1000 5/31/2019 1 Laura Trans-1,2-Dichloroethene SW 8260C <1 ug/L 1000 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C <1 ug/L 100 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C <1 ug/L 5 5/31/2019 0.4 Laura Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane	Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Tetrahydrofuran SW 8260C < 12 ug/L 1300 5/31/2019 12 Laura Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Laura Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 100 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L 5/31/2019 0.4 Laura Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane	Styrene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tetrahydrofuran SW 8260C < 12 ug/L 1300 5/31/2019 12 Laura Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Laura Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 100 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L 5/31/2019 0.4 Laura Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Laura	Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Laura Trans-1,2-Dichloroethene SW 8260C < 1 ug/L	Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 100 5/31/2019 1 Laura Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L	Tetrahydrofurar	١	SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L $5/31/2019$ 0.4 Laura Trichloroethene SW 8260C < 1 ug/L $5/31/2019$ 1 Laura Trichlorofluoromethane SW 8260C < 1 ug/L $5/31/2019$ 1 Laura	Toluene		SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Laura Trichlorofluoromethane SW 8260C < 1 ug/L	Trans-1,2-Dichl	oroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trichlorofluoromethane SW 8260C <1 ug/L 5/31/2019 1 Laura	Trans-1,3-Dichl	oropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Thomoromoromoromoromoromoromoromoromoromo	Trichloroethene	•	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Vinyl Chloride SW 8260C < 1 ug/L ² 5/31/2019 1 Laura	Trichlorofluoron	nethane	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
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.



Environment Testing TestAmerica

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

LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

Qualifiers

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		w	•
_	v	IVI	•

RPD

TEF

TEQ

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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.
n	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

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 1.6° 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.

Eurofins TestAmerica, Sacramento 6/12/2019

Detection Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

Client Sample ID: NOB_056

Lab Sample ID: 320-50812

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.8	B	1.9	0.33	ng/L		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	В	1.9	0.16	ng/L	1	EPA 537(Mod)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	JI	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

Client Sample ID: NOB_056

M2-8:2 FTS

Date Collected: 05/21/19 12:40 Date Received: 05/31/19 09:20

Lab Sample ID: 320-50812-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.8	В	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	В	1.9	0.16	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.23	JI	1.9	0.18	ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorooctanesulfonic acid (PFOS)	7.4		1.9		ng/L		06/04/19 06:51	06/05/19 05:52	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		06/04/19 06:51	06/05/19 05:52	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			06/05/19 05:52	1
6:2 FTS	ND		9.3		ng/L			06/05/19 05:52	1
8:2 FTS	ND		1.9		ng/L			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
lsotope 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
1802 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

06/04/19 06:51 06/05/19 05:52

50 - 150

78

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50812-7	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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

Eurofins TestAmerica, Sacramento

6/12/2019

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

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

Lab Sample ID: MB 320-298925/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 299173	Prep Batch: 298925

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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
	MD	MD							

(PFHxDA)						
	MB	MB				
Isotope Dilution	%Recovery	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
1802 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: L0	CS 320-298925/2-A
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Matrix: Water							Prep Type: Total/NA
Analysis Batch: 299173							Prep Batch: 298925
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Eurofins TestAmerica, Sacramento

6/12/2019

Client Sample ID: Lab Control Sample

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Lab Sample ID: LCS 320-298925/2-A

Matrix: Water

Analyte

Analysis Batch: 299173

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Perfluoro-n-hexadecanoic acid

(PFOS)

(PFDS)

6:2 FTS

8:2 FTS

(PFHxDA)

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

LCS LCS

Result Qualifier Unit

Spike

Added

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

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

D %Rec

99

93

97

104

103

97

67 - 127

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

Prep Type. Total/NA	
Prep Batch: 298925	
%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	40.0	33.3	ng/L	83	60 - 120	
(PFUnA)						
Perfluorododecanoic acid	40.0	36.7	ng/L	92	71 - 131	
(PFDoA)						
Perfluorotridecanoic acid	40.0	36.5	ng/L	91	72 - 132	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	34.2	ng/L	85	68 - 128	
(PFTeA)						
Perfluorobutanesulfonic acid	35.4	34.8	ng/L	98	73 - 133	
(PFBS)						
Perfluorohexanesulfonic acid	36.4	32.8	ng/L	90	63 - 123	
(PFHxS)						
Perfluoroheptanesulfonic Acid	38.1	39.3	ng/L	103	68 - 128	
(PFHpS)						

37.1

38.6

40.0

37.9

38.3

40.0

36.6

35.8

38.9

39.4

39.6

38.8

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

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	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-298925/3-A

Matrix: Water

Perfluoro-n-hexadecanoic acid

(PFHxDA)

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

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

ol Sam _l	ole Dup
• •	otal/NA

Analysis Batch: 299173							Prep Ba	atch: 29	
	Spike	LCSD					%Rec.		RPD
Analyte	Added		Qualifier	Unit	D		Limits	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-methylperfluorooctanesulfona midoacetic 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

40.0

40.1

ng/L

100

72 - 132

3

30

LCSD	LCSD	
%Recovery	Qualifier	Limits
81		50 - 150
88		50 - 150
85		50 - 150
88		50 - 150
87		50 - 150
83		50 - 150
88		50 - 150
86		50 - 150
85		50 - 150
71		50 - 150
81		50 - 150
44	*	50 - 150
84		50 - 150
76		50 - 150
84		50 - 150
96		50 - 150
80		50 - 150
	%Recovery 81 88 85 88 87 83 88 86 85 71 81 44 84 76 84	88 85 88 87 83 88 86 85 71 81 44 * 84 76 84

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

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry 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

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry SDG: SW-5 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

thority IAB	Program DoD		EPA Region	L2468	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory i	s not certified by the	e governing authority. This	list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyte	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfonam IMeFOSAA)	nidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (PFE	BS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (PF	DS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDoA	A)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (Pf	FHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)	
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (P	FHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PFC	OS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA)	
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid (PFT	eA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFUnA	A)

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-7 Project/Site: DWGTF_Londonderry 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

SDG: SW-5 - Londonderry, NH

Job ID: 320-50812-7

 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
 Asset ID

3

6

R

9

11

13

14

15

TestAmerica Sacramento

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

Chain of Custody Record

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 so.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC N	9.				
CI	lent Contact: erek Bennett	Phone: 603 - 224			E-M		son@te	estamencainc.com		Page:					
Co	ompany	1001 KA-1	4187		One	T.	3011 € 10			Jab #:	Job #:				
_	ew Hampshire Dept of Environ Services	Due Date Request	lad:			-		Analysis Re	quested	Proco	nution Codes				
	ddress: 9 Hazen Drive	Due Date Request	ieo:						100 HORADON NOTO	A - HC	vation Codes: M - Hexans				
	ny:	TAT Requested (d	lays):				n			B - Na	OH N-None				
100	oncord late, Zip:	Standard TAT					alyte			D - Niti					
	H, 03302	PO#:				41	OAn	320-50812 Chain of (IIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIII	E - Nai F - Me	DH R - Na2S2O3				
	nonei 603) 271-8520	Purchase Orde	r not require	d		6	ist (Judiody	G - Am H - Ass	chlor S - H2SO4 orbic Acid T - TSP Dodecahyd				
	mail: erek.bennett@des.nh.gov	WO#: Pay using 3904				S or N	Standard List (2'O'Analytes)	11111	TITITI	n J-lce	U - Acetone Vater V - MCAA				
Pri	roject Name:	Project #:			_	o K	Stand			Containers C+ED	TA W - pH 4-5				
T.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes (Yes	AS, S			Other:	2 - omer (specify)				
L	ondonderry, NH	accivir.				Sam	D) PF			ō					
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sealid, Demaste/bil, BT=Tlasue, A=Air	X Field Filtered Sample (PFC IDA - (MOD) PFAS,			X Total Number	Special Instructions/Note:				
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.				
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.				
	NOB-052	5/21/19	1040	6	SW	M	x			500					
	NOB-053	5/21/19	1100	6	54	W	x			Sia-					
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	- 3				
	NOB-055	5/21/19	1150	b	SW	W	ю			Sw	-4				
	NOB-056	5/21/19	1240	6	Sw	M	×			Sw.	5				
	NOB-057	5/21/19	1320	6	SW	W	×			Sw	-9				
	Field Dlank	5/21/19	1325	6	الا	1	×			Lab	supplied Alak				
P	Possible Hazard Identification					Sa	mple D	isposal (A fee may be	assessed if samples are ret	ained long	er than 1 month)				
Di	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	on B - Unkn	own — F	Radiological		Sp	Reti	urn To Client Structions/QC Requireme	Disposal By Lab A	rchive For	Months				
_	mpty Kit Relinquished by:		Date:			Time:		00.1	Method of Shipment:						
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time 5/22/19	141	42 Company NHDES				
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19	14:	Company				
Re	elinquisheg by:	Date/Time:	17.1-		Company		Receive	DOIN COOL	Date/June 5/3//		20 STA-ST				
2	Custody Seals Intact: Custody Seal No.: 7410	-0%					Cooler 1	emperature(s) °C and Other R		, ,	00 1000				
_	containers labeled as "NOB_S4" 1	1	1	^	1		_	./		1 -	Ver: 08/04/2016				

6/12/2019

Page 16 of 17

Job Number: 320-50812-7 SDG Number: SW-5 - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported :

06-Jun-19 08:17

REPORT OF ANALYSIS

119052561.07

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Surface Water, NOB 056

sampled Date:	21-May-2019 12:40

SM 4500 NO2B

NH

Nitrate

Nitrite-N

<u>Analyte</u>	<u> Kesuit</u>	Limit	<u>Units</u>	<u>Analyzed</u>	<u>metnoa</u>	Anaiyst
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH
Nitrite						
<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>

mg/L

05/22/2019 16:50

Reporting

0.01

< 0.01

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	Method	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.38	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

A Division of Noteby Analytical LLC

A Division of Nelson Analytical, LLC

Turnaround Requirements	(check one	<u>,,</u>					-				+											-									
				<u> </u>		_		_		==	+	_					ject	into	orma	atio	n							_			
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	les Need Prior Ame Day Turnard One Day Turnard Two Day Turnard Two Day Turnard Two Day Turnard Normal Turnard	und und und und	'al	Project #: 95/60. Project Name: London Jerry Town/Site: London Jerry Sampler: London Jerry Company: Alabis — Bid Reference:					7/54-					Project Manager: Mark Henderson Report To: Mark Henderson Invoice To: Mark Henderson Phone: 603 - 224-4182 E-mail: MHenderson@noble-gov						vo 49.	<u> </u>										
Sample Informa	ition	_=		٧	OCs			S	voc	s			Pet	trole	um			Ме	tals		٧	Vet (Che	nist	ry / I	Inorg	anio	s		ı	
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Paramater only:		1.1-Luxatile / ELIB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	MADEP VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X EPA 300.0: Chionide / Sulfate Sromide / Amp / 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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
					1																							_T	ĺ		
telinquished by: Date/Time: 5/21/19 /54/5 Relinquished by: Date/Time: Date/Time:			5	Received by: 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							ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo															
			[Receip	t Temp	erature	:	<u>آ_</u> د	-/				Does a price quote apply? Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916												



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





03302-0

317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19050392

19050392

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry Date: 6/24/2019

Lab ID:

Concord NH

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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 E	Blank has hit for Toluene but sample	s all <dl.< td=""><td colspan="12"></td></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"



Analytical Results

19050392

6/25/2019

Lab ID:

Date:

NHDES MtBE Remediation Bureau

Derek S. Bennett

Bromochloromethane

Bromoform

Bromodichloromethane

Control #: 19050392

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01
Project Location: SW-5

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	atrix
19050392-008	NOB_056				5/21/20	19 12:40:00 PM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachlo	proethane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1,1-Trichloroet	hane	SW 8260C	< 1 ug/L	200		5/31/2019	1	LauraB
1,1,2,2-Tetrachlo	proethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroet	hane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroetha	ne	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroethe	ne	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloroprop	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorobe	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichloropr	opane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorobe	enzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethylbe	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-C	hloropropane	SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoetha	ne	SW 8260C	< 1 ug/L	0.02		5/31/2019	1	LauraB
1,2-Dichlorobenz	zene	SW 8260C	< 1 ug/L	600		5/31/2019	1	LauraB
1,2-Dichloroetha	ne	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,2-Dichloroprop	ane	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,3,5-Trichlorobe	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3,5-Trimethylbe	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,3-Dichlorobenz	ene	SW 8260C	< 1 ug/L	40		5/31/2019	1	LauraB
1,3-Dichloroprop	ane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,4-Dichlorobenz	ene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
2,2-Dichloroprop	ane	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-Meth	yl 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-Met	thyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
2-Methoxy-2-Met	thyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
2-Methyl-2-Propa	anol (TBA)	SW 8260C	< 20 ug/L			5/31/2019	20	LauraB
4-Chlorotoluene		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Isopropyltoluer	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
4-Methyl-2-Penta	anone	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
			=					

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1

0.6

LauraB

LauraB

LauraB

5/31/2019

5/31/2019

5/31/2019

< 1 ug/L

< 0.6 ug/L

< 1 ug/L

3

SW 8260C

SW 8260C

SW 8260C



Sample	Client Sample Id	lentity			Start Date/T	ime Sampled:	Ma	atrix
19050392-008	NOB_056				5/21/20	19 12:40:00 PM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane		SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraE
Carbon Disulfide	e	SW 8260C	< 1 ug/L			5/31/2019	1	LauraE
Carbon Tetrach	loride	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-Dichloro	ethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Dibromomethan	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
Hexachlorobuta	diene	SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Isopropylbenzer	ne	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 Chlo	ride	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-Propylbenzer	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Tetrahydrofuran	1	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-Dichle	oroethene	SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trans-1,3-Dichle	oropropene	SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
Trichloroethene		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trichlorofluorom	nethane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Vinyl Chloride		SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB



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.



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

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

1

2

4

0

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13

14

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Definitions/Glossary

Toxicity Equivalent Quotient (Dioxin)

Client: New Hampshire Dept of Environmental Serv Project/Site: DWGTF_Londonderry Job ID: 320-51329-8 SDG: SW-6 - Londonderry, NH

Qualifiers

TEQ

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

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 Percent Recovery Contains Free Liquid Contains No Free Liquid Duplicate Error Ratio (normalized absolute difference)
%R	Percent Recovery Contains Free Liquid Contains No Free Liquid
	Contains Free Liquid Contains No Free Liquid
CFL	Contains No Free Liquid
	·
CNF	Duplicate Error Ratio (normalized absolute difference)
DER	
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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry 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	В	1.9	0.34	ng/L		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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.8	В	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	В	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
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

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-8	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-8	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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							
Surrogato Logond									

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

Eurofins TestAmerica, Sacramento

6/27/2019

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry 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	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 301867

Perfluorodecanesulfonic acid (PFDS)

N-methylperfluorooctanesulfonamidoa

MR MR **MDL** Unit Prepared Analyzed Dil Fac Analyte Result Qualifier RL 2.0 06/17/19 06:39 06/18/19 05:56 Perfluorobutanoic acid (PFBA) 0.407 .ī 0.35 ng/L Perfluoropentanoic acid (PFPeA) ND 2.0 0.49 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorohexanoic acid (PFHxA) ND 2.0 0.58 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluoroheptanoic acid (PFHpA) ND 2.0 0.25 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorooctanoic acid (PFOA) ND 2.0 0.85 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorononanoic acid (PFNA) ND 2.0 0.27 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorodecanoic acid (PFDA) ND 2.0 0.31 ng/L 06/17/19 06:39 06/18/19 05:56

Perfluoroundecanoic acid (PFUnA) ND 2.0 1.1 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorododecanoic acid (PFDoA) ND 2.0 0.55 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorotridecanoic acid (PFTriA) ND 2.0 06/17/19 06:39 06/18/19 05:56 1.3 ng/L Perfluorotetradecanoic acid (PFTeA) ND 2.0 0.29 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorobutanesulfonic acid (PFBS) ND 2.0 0.20 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluorohexanesulfonic acid (PFHxS) 0.303 2.0 0.17 ng/L 06/17/19 06:39 06/18/19 05:56 ND 06/17/19 06:39 06/18/19 05:56 2.0 0.19 ng/L Perfluoroheptanesulfonic Acid (PFHpS) Perfluorooctanesulfonic acid (PFOS) ND 2.0 0.54 na/L 06/17/19 06:39 06/18/19 05:56

2.0

2.0

0.32 ng/L

1.2 ng/L

cetic acid (NMeFOSAA) 6:2 FTS ND 10 2.0 ng/L 06/17/19 06:39 06/18/19 05:56 8:2 FTS ND 2.0 0.38 ng/L 06/17/19 06:39 06/18/19 05:56 ND 2.0 0.89 ng/L 06/17/19 06:39 06/18/19 05:56 Perfluoro-n-hexadecanoic acid

ND

ND

(PFHxDA)

MB MB Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 13C4 PFBA 82 50 - 150 06/17/19 06:39 06/18/19 05:56 13C5 PFPeA 91 50 - 150 06/17/19 06:39 06/18/19 05:56 88 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFHxA 13C4 PFHpA 97 50 - 150 06/17/19 06:39 06/18/19 05:56 13C4 PFOA 90 50 - 150 06/17/19 06:39 06/18/19 05:56 13C5 PFNA 90 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFDA 92 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFUnA 93 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFDoA 91 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFTeDA 70 50 - 150 06/17/19 06:39 06/18/19 05:56 13C3 PFBS 88 50 - 150 06/17/19 06:39 06/18/19 05:56 13C2 PFHxDA 35 06/17/19 06:39 06/18/19 05:56 50 - 150 1802 PFHxS 87 50 - 150 06/17/19 06:39 06/18/19 05:56 13C4 PFOS 82 50 - 150 06/17/19 06:39 06/18/19 05:56 d3-NMeFOSAA 95 50 - 150 06/17/19 06:39 06/18/19 05:56 M2-6:2 FTS 105 50 - 150 06/17/19 06:39 06/18/19 05:56 M2-8:2 FTS 95 50 - 150 06/17/19 06:39 06/18/19 05:56

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water Analysis Batch: 301867							Prep Type: Total/NA Prep Batch: 301643
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.7		ng/L		102	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 18

Prep Batch: 301643

06/17/19 06:39 06/18/19 05:56

06/17/19 06:39 06/18/19 05:56

1

1

1

8

Lab Sample ID: LCS 320-301643/2-A

Matrix: Water

(PFHxDA)

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

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

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA
	Prep Batch: 301643

Analysis Batch: 301867	Spike	LCS	LCS				Prep Batch: 30164 %Rec.
Analyte	Added		Qualifier	Unit	D	%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-methylperfluorooctanesulfona midoacetic 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	40.0	40.3		ng/L		101	72 - 132

	LCS	LCS	
Isotope Dilution	%Recovery	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
1802 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

6/27/2019

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

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

Lab Sample ID: LCSD 320-30 Matrix: Water	1643/3-A					Client Sa	ample ID: La	Prep Ty	pe: Tot	tal/NA
Analysis Batch: 301867			Spike	LCSD	LCCD			Prep B	atcn: 30	01643 RPD
Analyte			Added	_	Qualifier	Unit	D %Rec	%Rec.	RPD	Limit
Perfluorobutanoic acid (PFBA)			40.0	41.1	Qualifier	ng/L	$\frac{103}{103}$	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)			40.0	38.8		ng/L	97	66 ₋ 126	2	30
. , , ,			40.0	40.0		_	100	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)						ng/L		66 - 126	· · · · · · · · · · · · · · · · · · ·	
Perfluoroheptanoic acid (PFHpA)			40.0	39.4		ng/L	99			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			40.0	35.8		ng/L	89	60 - 120	8	30
(PFUnA)			40.0	20.4		/I	00	74 404	0	20
Perfluorododecanoic acid			40.0	38.4		ng/L	96	71 - 131	2	30
(PFDoA) Perfluorotridecanoic acid			40.0	34.5		ng/L	86	72 - 132	4	30
(PFTriA)			40.0	04.0		rig/L	00	72 - 102	7	30
Perfluorotetradecanoic acid			40.0	36.8		ng/L	92	68 ₋ 128	1	30
(PFTeA)						Ü				
Perfluorobutanesulfonic acid			35.4	37.6		ng/L	106	73 - 133	8	30
(PFBS)										
Perfluorohexanesulfonic acid			36.4	32.8		ng/L	90	63 - 123	4	30
(PFHxS)						_			_	
Perfluoroheptanesulfonic Acid			38.1	40.1		ng/L	105	68 - 128	2	30
(PFHpS)			27.4	27.0		n a /l	100	67 107	4	20
Perfluorooctanesulfonic acid			37.1	37.0		ng/L	100	67 - 127	1	30
(PFOS) Perfluorodecanesulfonic acid			38.6	38.3		ng/L	99	68 - 128	1	30
(PFDS)			30.0	30.5		rig/L	33	00 - 120		30
N-methylperfluorooctanesulfona			40.0	39.7		ng/L	99	67 ₋ 127	2	30
midoacetic acid (NMeFOSAA)						Ü				
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			40.0	38.5		ng/L	96	72 - 132	4	30
(PFHxDA)						-				
	LCSD	LCSD								
Isotope Dilution %	Recovery	Qualifier	Limits							
13C4 PFBA	86		50 - 150							
13C5 PFPeA	91		50 - 150							
13C2 PFHxA	88		50 - 150							
13C4 PFHpA	93		50 - 150							

	LCSD	LCSD	
Isotope Dilution	%Recovery	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

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

LCMS

Prep Batch: 301643

L	₋ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
3	320-51329-8	NOB_065	Total/NA	Water	3535	
N	MB 320-301643/1-A	Method Blank	Total/NA	Water	3535	
L	_CS 320-301643/2-A	Lab Control Sample	Total/NA	Water	3535	
L	_CSD 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

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

Client Sample ID: NOB_065

Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-8 Date Collected: 06/11/19 13:25

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry SDG: SW-6 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

IAB	DoD			L2468	01-20-21
The following analytes the agency does not o	•	ort, but the laboratory	v is not certified by the	e governing authority. Th	is list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyte	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	amidoacetic
EPA 537(Mod)	3535	Water	Perfluc	probutanesulfonic acid (P	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (F	PFDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (F	PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid	(PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (P	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	oropentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-8 Project/Site: DWGTF_Londonderry 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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-51329-8	NOR 065	Water	06/11/10 13:25	06/14/10 00:15	

Job ID: 320-51329-8

SDG: SW-6 - Londonderry, NH

880 Riverside Parkway West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

				_
HE	LEADER IA	ENVIRONM	ENTAL TE	STING

Phone (916) 737-5600 Fax (916) 372-1059																THE LEADER IN	ENVIRONMENTA	L TESTING
Client Information	Diffs /				ab PM: ohnsor	n, Orl	lette :	s				Carner	Tracking	No(s)		COC No:		
Client Contact: Derek Bennett	Phone '	07/			-Mail: rlette.jc	hnse	on@i	testame	ericain	c.com						Page:		
Company: New Hampshire Dept of Environ Services									Ai	nalys	is Rec	uest	ed			Job #:		
Address:	Due Date Request	ed:														Preservation C	odes:	
29 Hazen Drive Gity:	TAT Requested (d	ays):	-	-	\dashv		Ш				1			l I		A - HCL B - NaOH	M - Hexane N - None	
Concord							tes)			1	XI				1 1	C - Zn Acetate	O - AsNaO2	
State, Zip: NH, 03302	Standard TAT						Analy			1	34					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3	
Phone:	PO#		_		-1		1	d		15	3			1 1		F - MeOH G - Amphior	R - Na2S2O3 S - H2SO4	
(603) 271-8520	Purchase Order	not require	d		- Q		List	1	1		211					H - Ascarbic Acid	T-TSP Dode	cahydrate
Emall: derek.bennett@des.nh.gov	WO #: Pay using 3904				es or I	(ou	Standard List (Analytes)		1	- 0	ana			1 1	1	J - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5	
Project Name: TrustFund_Londondomy DWGTF_LONDONDORRAY	Project #				le (Ye)				l dieta	K-EDTA L-EDA	Z - other (spe	city)
Site: Londonderry, NH	SSOW#:				Samp	SD (Y) PFA			0	118	М			00 10			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Winvater, Schoftl, Ocwaste/or	Filtered		PFC IDA - (MOD) PFAS,				7)				Total Mumber		nstructions/N	Note:
	><	><	Preserva	tion Code		X											<	
N03_058	6-3 19	1200	6	Diw	N		X									114 61721	FIELD RI)
NUB-059	6-3-19	1225	i-	DW	N		X									7 Roun		
NOB_060	6-5-19	945	6	Du	IJ		X									19 JUSTIA		
NoB-061	6-5-19	1110	6	DW	N		X									16 OTTER		
							П					ďΨ						
													1	1 1	manna			
	M L												11111					
					I K													
								1					330	E1320 (Chain of	f Custody		
Possible Hazard Identification						Sam		Dispos			ay be a	ssess	9				- F	
Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own F	Radiological	-		Spec		turn To			uiremer	isposa its:	I By La	ıb	- Arc	hive For	Months	
Empty Kit Relinquished by:		Date:			Tin	ne:	-	-	-			M	ethod of	Shipment	_		_	
Relinquished by:	Date/Time:		1	Company		F	Receiv	red by:	11	1	NIT	¥3		Date/Time	7		Company	
Gollow Bule	6-5-19/15	30		NOB	5		1	ch	2	X.	cold	How	je	4/5	/15	15:30 15	4 NADE	5
Heling/ising/by:	1.112119	14	30	Ompany DH)		S	1100	2h	Cau	le-	4.	7.	Date/Time	2/15	544-143	Company	
Reindhished by:	Date/Time:			Company		F	Regelv	ed by	, 5					Date/Time	4/10	1	Company	0.00
Custody Seal No.:	1							Tempera		°C and		marks		1/0//	7110		ENDS	ne
A Vac A No							- GOILI	Sempore		- and	D. 1.10	1 02	7	419		915 50	6/19/19	

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Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Client Information	R. Rizz	4		J	ohnsor	. Orle	tte S		Carrier	Tracking No(s):	COC No.	
Client Contact: Derek Bennett	603-49		7	-	Maii: lette.ic	hnso	n@testameric	cainc.com			Page.	
Company: New Hampshire Dept of Environ Services	1005 11	7 200				,,,,,,,,	- 14-34411	Analysis	Reguest	ad	Jab #	
Address:	Due Date Request	ed:	-			100	TIT	Allalysis	riequest		Preservation C	odes:
29 Hazen Drive	TAT Requested (d	ays):		_	-11		111			A + A + A + A	A - HCL B - NaOH	M - Hexane N - None
Concord State, Zip:	Standard TAT				13	1	di l				C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
NH, 03302	The Carlo				1	1		1	11		E - NaHSO4 F - MeOH	O - Na2SO3 FI - Na2S2O3
Phone: 603) 271-8520	PO #: Purchase Orde	r not require	d		6	1	1	2	+11	11111	G - Amchlor H - Ascorbic Acid	S - H2SO4
Email: derek.bennell@des.nh.gov	Wo #: Pay using 3904				Or N	(0)		1 2			J - Ide J - DI Water	U - Acetone V - MCAA
Project Name: DWGTF_Londonderry	Project #:				(Yes	sorl	Standard List (and Analytes)				K-EDTA L-EDA	W - pH 4-5. Z - other (specify)
Site:	SSOW#T				- ldwi	D (Yes		0			Other:	
Londonderry, NH				*****	- Spa	S/MSD) cr			5	
			Sample Type	Matrix (Waymen)		m MS/	Total and a second	"	3,1		or Special	
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	Sessilid, Dewasta/or	Air)	Perform					oto Cassist	Instructions/Note:
Sample identification	Sample Date			tion Code		X					Special	mstructions/Note:
NOB-062 5 Allison En	6-11-19	0930	G	DW	0	X						
NOB_062 5 Allison Lu. NOB_063 29 Beacon St.	6-11-19	1015	6	DW	0	17	7					
NOB-064 68 AKRANDEV Rd.	6-11-19	1055	6	DW	V)						
NOR_065	6-11-19	1325	6	5W	N	X						
NOB-066	6-11-19	1410	6	500	N	1						
NOB- 067	6-11-19	1445	6	SW	N	1					13	
NOB-068	6-11-19	1520	6	SW	N)						
NOB-069	6-11-19	1550	6	SW	N)						
NOB_ 070	6-12-19	0255	6	SW	N	1						
NOB_071	6-12-19	1000	6	500	N	1						
							1111					
Possible Hazard Identification								(A fee may	be assess	ed if samples are retai	ned longer than	ACCURATION OF THE PROPERTY OF
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own H	ladiological	-	-		Return To Co		Disposa	al By Lab Arc	chive For	Months
Empty Kit Relinquished by:		Date:			Tim		ar monwanen	. 44 / 124-115		ethed of Shipment:		
Relinquished by: / - / /			4400	Company			ceived by:			Date/Tine:		Company
The land Theysa		Jobs 5	CIDE	Company Company	15				20			
man 3	Cale/Jims . 14	8:30		NOT	215			12 Sta	ver)	6/13/19	8:30	DES 4.70
Relinquisher	Date Time: 1/9	14:30		Weti	ES		ceived by:	colle	(4.7°C)) Date 7 ime: 1/5	14:30	NHDES
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No.	7					Co	oler Temperatur	e(s) °C and Oth		1-00/240	-	LIMIM
M 144 N 11M				_	_	-				100/2	915	Ver 08/04/7016

Job Number: 320-51329-8

SDG Number: SW-6 - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

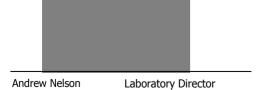
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB



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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.04 Londonderry WQ Eval., Londonderry, NH, #95160.00

NOB 65

sampled Date: 11-Jun-2019 01:25

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.11	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: <u>. </u>	
Sample Matrix A of Containers Sample Matrix # of Containers A for A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No Is this NH "Odd Fund" related?YesNo Does a price quote apply?YesNo Does a price quote apply?	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 **Project Name:** MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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"



Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19060219

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location:

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	atrix
19060219-004 N	NOB_065				6/11/20	19 1:25:00 PM	Grou	ndwater
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachlord	oethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroetha	ane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachlord	oethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroetha	ane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	е	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	е	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloroproper	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloroben	zene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloroprop	pane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichloroben	zene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylber	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chl	loropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	e	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenze	ne	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	е	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropar	ne	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichloroben	zene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylber	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenze	ne	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenze		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropar		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-Meth	vl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
•	yl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propan		SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	()	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	ì	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentan		SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	10110	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
Bromochlorometha	ane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromet		SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	and IC	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB
וווטוטוווטוטווו		344 02000	< I ug/∟	•			I	LaulaD

Page 1 of 3



Sample	Client Sample Id	entity			Start Date/T	ime Sampled:	Ма	atrix
19060219-004	NOB_065				6/11/20	19 1:25:00 PM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane		SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfid	e	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrach	loride	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-Dichloro	pethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobuta	diene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzei	ne	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 Chlo	ride	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-Propylbenzer	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	1	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-Dichle	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichle	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluorom	nethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride		SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB



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.



Environment Testing TestAmerica

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



Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Not Detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Quality Control

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry SDG: SW-7 - Londonderry, NH

Qualifiers

LC	MS
_	

ND

PQL

QC

RL

RER

RPD

TEF **TEQ**

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	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

6/27/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry SDG: SW-7 - Londonderry, NH

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 1.0° C and 2.4° 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" gualifier 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

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry 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		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 JI	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry SDG: SW-7 - Londonderry, NH

Client Sample ID: NOB_066

Lab Sample ID: 320-51329-9 Date Collected: 06/11/19 14:10

Matrix: Water Date Received: 06/14/19 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	7.2	В	2.0	0.35	ng/L		06/17/19 06:39	06/18/19 07:40	
Perfluoropentanoic acid (PFPeA)	9.3		2.0	0.48	ng/L		06/17/19 06:39	06/18/19 07:40	
Perfluorohexanoic acid (PFHxA)	10		2.0	0.57	ng/L		06/17/19 06:39	06/18/19 07:40	•
Perfluoroheptanoic acid (PFHpA)	6.3		2.0	0.25	ng/L		06/17/19 06:39	06/18/19 07:40	
Perfluorooctanoic acid (PFOA)	30		2.0	0.84	ng/L		06/17/19 06:39	06/18/19 07:40	•
Perfluorononanoic acid (PFNA)	2.2		2.0	0.27	ng/L		06/17/19 06:39	06/18/19 07:40	•
Perfluorodecanoic acid (PFDA)	0.65	JI	2.0	0.31	ng/L		06/17/19 06:39	06/18/19 07:40	
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 07:40	•
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 07:40	•
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 07:40	•
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/17/19 06:39	06/18/19 07:40	•
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	В	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	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		2.0		ng/L			06/18/19 07:40	1
6:2 FTS	ND		9.9		ng/L			06/18/19 07:40	1
8:2 FTS	ND		2.0		ng/L			06/18/19 07:40	•
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.88	ng/L		06/17/19 06:39	06/18/19 07:40	1
lsotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	58		50 - 150				06/17/19 06:39	06/18/19 07:40	
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	
13C3 PFBS	83		50 - 150				06/17/19 06:39	06/18/19 07:40	
13C2 PFHxDA	18	*	50 - 150				06/17/19 06:39	06/18/19 07:40	
1802 PFHxS	85		50 - 150				06/17/19 06:39	06/18/19 07:40	
13C4 PFOS	80		50 - 150				06/17/19 06:39	06/18/19 07:40	
d3-NMeFOSAA	98		50 - 150				06/17/19 06:39	06/18/19 07:40	
M2-6:2 FTS	98		50 - 150				06/17/19 06:39	06/18/19 07:40	
M2-8:2 FTS	95		50 ₋ 150				06/17/10 06:30	06/18/19 07:40	1

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry SDG: SW-7 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

_			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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 = 1802 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

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry SDG: SW-7 - Londonderry, NH

Client Sample ID: NOB_066

Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-9 Date Collected: 06/11/19 14:10

Matrix: Water

Batch **Batch** Dil Initial Final **Batch** Prepared Method Factor **Prep Type** Type Run **Amount Amount** Number or Analyzed Analyst Lab 301643 Total/NA Prep 3535 253.4 mL 10.00 mL 06/17/19 06:39 MYV TAL SAC Total/NA EPA 537(Mod) 06/18/19 07:40 JRB TAL SAC Analysis 301867 1

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: 320-51329-9 Project/Site: DWGTF_Londonderry 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 Nur	nber Expiration Date
NAB	DoD			L2468	01-20-21
The following analyte the agency does not o	•	ort, but the laboratory	y is not certified by the	e governing authority	. This list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesu NMeFOSAA)	lfonamidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic aci	id (PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFI	BA)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic ac	id (PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PF	DA)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic A	cid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PI	FHpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic ac	sid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PF	HxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic a	acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PF	NA)
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic aci	d (PFOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PF	OA)
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PI	FPeA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid	i (PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (F	PFTriA)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic 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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-9 Project/Site: DWGTF_Londonderry 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	

880 Riverside Parkway
West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

thone (916) 737-5600 Fax (916) 372-1059				THE
	Sampler: /	Lab PM:	Carrier Tracking No(s):	0001
	13/2/	Jahrene Odette C	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(A. 345)

Client Information Client Contact: Derek Bennett orlette johnson@testamericainc.com 449-2007 **Analysis Requested** New Hampshire Dept of Environ Services Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH N - None IDA - (MOD) PFAS, Standard List (A Analytes) Concord C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P-Na2O4S E - NaHSO4 Q - Na2SO3 NH, 03302 F-MeOH R - Na2S2O3 Phone: G - Amchior 5-H2SO4 Purchase Order not required (603) 271-8520 T - TSP Dodecahydrate H - Ascarbic Acid - Ice U - Acetone Email MS/MSD (Yes or No) J - DI Water V - MCAA Pay using 3904 derek.bennett@des.nh.gov W - pH 4-5 K-EDTA Project #: Z - other (specify) L-EDA TrustFund Londondorry DWGTF- LUNDONDERRY Other: SSOW#: Londonderry, NH 6 Total Number Matrix Sample (Waiwater, Type Sample (C=comp. PFC Sample Date G=grab) ST=Tissue, A=Air) Sample Identification Time Special Instructions/Note: Preservation Code: NOB_058 1200 6 Diw 114 LITEMFIELD RD 6 NUB 159 1725 DW 6 NOB_060 19 JUSTIN CIRCLE DW 16 OTTERSON RD NOIS-061 6 1110 Sample Disposal (A fee may be assesse Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Date lethod of Shipment NOBI DE Custody Seals Intact: Custody Seal No .: Cooler Temperature(s) °C and Other Remarks 915 50 6/14/19 A Yes A No

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TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 G - Amchior 5 - H2SO4 (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z - other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

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6/27/2019

Page

14 of 15

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-9 SDG Number: SW-7 - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 51329 List Number: 1

Creator: Oropeza, Salvador

Creator. Cropeza, Sarvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

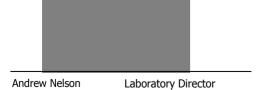
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB



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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.05 Londonderry WQ Eval.,

Londonderry, NH, #95160.00 **NOB 66**

sampled Date: 11-Jun-2019 02:10

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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	ma/L	06/26/2019 14:16	EPA 200.8	RT

Total Phosphate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	< 0.05	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: <u>. </u>	
Sample Matrix A of Containers Sample Matrix # of Containers A for A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No No No No No No No N	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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

Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19060219

29 Hazen Drive, PO Box 95 Project Number: DWGTF Londonderry

Concord NH 03302-0 Project Name: MTBE_01

Project Location:

Sample	Client Sample Identit	у			Start Date/T	me Sampled:	Ma	ntrix
19060219-005	NOB_066				6/11/2019 2:10:00 PM		Grou	ndwater
				MCL	Qualifier	Date/Time		
Parameter		Method	Result		Quanner	Analyzed	RDL	Analyst
1,1,1,2-Tetrachle	oroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroet		SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachle	oroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroet	thane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroetha	ane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethe	ene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloroprop	pene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorobe	enzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropi	ropane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorobe	enzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylb	enzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-C	Chloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoetha	ane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichloroben	zene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroetha	ane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloroprop	pane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorobe	enzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylb	enzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichloroben	zene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloroprop	oane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichloroben	zene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloroprop	pane	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-Meth	nyl 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-Me	thyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
•	thyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Prop		SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	, ,	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltolue	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pent		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
Bromochlorome	thane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichlorom		SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	ionano	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB
וווטוטווווטו		344 02000	< r ug/∟	•		5 20.0	1	Laurab

Page 1 of 3



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

Sample	Client Sample Id	lient Sample Identity Start Date/Time Sample		ime Sampled:	Ма	atrix		
19060219-005	NOB_066				6/11/20	19 2:10:00 PM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane		SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfid	e	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrach	loride	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-Dichloro	pethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloror	nethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobuta	diene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenze	ne	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 Chlo	ride	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-Propylbenzer	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofurar	1	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-Dichl	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichl	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoron	nethane	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.



Environment Testing TestAmerica

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

LINKS

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Have a Question?



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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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry SDG: SW-8 - Londonderry, NH

Qualifiers

RPD

TEF

TEQ

LCMS	
Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

6/27/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry SDG: SW-8 - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry 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		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 (PEOS)	5.5	2.0	0.53	na/l	1	FPA 537(Mod)	Total/NA

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry SDG: SW-8 - Londonderry, NH

Client Sample ID: NOB_069

Lab Sample ID: 320-51329-12 Date Collected: 06/11/19 15:50 **Matrix: Water**

Date Received: 06/14/19 09:15

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	4.9	В	2.0		ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluoropentanoic acid (PFPeA)	4.9		2.0		ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorohexanoic acid (PFHxA)	6.3		2.0	0.57	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluoroheptanoic acid (PFHpA)	5.0		2.0	0.24	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorooctanoic acid (PFOA)	27		2.0	0.83	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorononanoic acid (PFNA)	1.1	J	2.0	0.26	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.28	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorobutanesulfonic acid (PFBS)	3.8		2.0	0.20	ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluorohexanesulfonic acid (PFHxS)	2.7	В	2.0		ng/L		06/17/19 06:39	06/18/19 08:04	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0		ng/L			06/18/19 08:04	
Perfluorooctanesulfonic acid (PFOS)	5.5		2.0		ng/L			06/18/19 08:04	
Perfluorodecanesulfonic acid (PFDS)	ND		2.0		ng/L		06/17/19 06:39	06/18/19 08:04	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		2.0		ng/L			06/18/19 08:04	•
6:2 FTS	ND		9.8		ng/L			06/18/19 08:04	
8:2 FTS	ND		2.0		ng/L			06/18/19 08:04	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.87	ng/L		06/17/19 06:39	06/18/19 08:04	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	58		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C5 PFPeA	86		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C2 PFHxA	84		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C4 PFHpA	94		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C4 PFOA	94		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C5 PFNA	92		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C2 PFDA	94		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C2 PFUnA	90		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C2 PFDoA	84		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C2 PFTeDA	49	*	50 - 150				06/17/19 06:39	06/18/19 08:04	
13C3 PFBS	86		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C2 PFHxDA	17	*	50 - 150				06/17/19 06:39	06/18/19 08:04	
1802 PFHxS	84		50 - 150				06/17/19 06:39	06/18/19 08:04	
13C4 PFOS	82		50 - 150				06/17/19 06:39	06/18/19 08:04	
d3-NMeFOSAA	96		50 - 150				06/17/19 06:39	06/18/19 08:04	
M2-6:2 FTS	101		50 - 150				06/17/19 06:39	06/18/19 08:04	
M2-8:2 FTS	93		50 ₋ 150				06/17/10 06:20	06/18/19 08:04	

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry SDG: SW-8 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-12	NOB_069	58	86	84	94	94	92	94	90
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-12	NOB_069	84	49 *	86	17 *	84	82	96	101
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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 = 1802 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
١	320-51329-12	NOB_069	Total/NA	Water	EPA 537(Mod)	301643

Lab Chronicle

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry SDG: SW-8 - Londonderry, NH

Client Sample ID: NOB_069

Lab Sample ID: 320-51329-12 Date Collected: 06/11/19 15:50 **Matrix: Water**

Date Received: 06/14/19 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-12 Project/Site: DWGTF_Londonderry 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 Nur	nber Expiration Date
NAB	DoD			L2468	01-20-21
The following analyte the agency does not o	•	ort, but the laboratory	y is not certified by the	e governing authority	. This list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesu NMeFOSAA)	lfonamidoacetic
EPA 537(Mod)	3535	Water	Perfluc	orobutanesulfonic aci	id (PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFI	BA)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic ac	id (PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PF	DA)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic A	cid (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PI	FHpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic ac	sid (PFHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PF	HxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic a	acid (PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PF	NA)
EPA 537(Mod)	3535	Water	Perfluc	orooctanesulfonic aci	d (PFOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PF	OA)
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PI	FPeA)
EPA 537(Mod)	3535	Water	Perfluc	orotetradecanoic acid	i (PFTeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (F	PFTriA)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic 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	

880 Riverside Parkway
West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

hone (916) 737-5600 Fax (916) 372-1059					
	Samplet: /	Lab PM:	Carrier Tracking No(s)	0001	
	3/2/	Tableson Catalan C	The state of the s	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	

Client Information Client Contact: Derek Bennett orlette johnson@testamericainc.com 449-2007 **Analysis Requested** New Hampshire Dept of Environ Services Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH N - None IDA - (MOD) PFAS, Standard List (A Analytes) Concord C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P-Na2O4S E - NaHSO4 Q - Na2SO3 NH, 03302 F-MeOH R - Na2S2O3 Phone: G - Amchior 5-H2SO4 Purchase Order not required (603) 271-8520 T - TSP Dodecahydrate H - Ascarbic Acid - Ice U - Acetone Email MS/MSD (Yes or No) J - DI Water V - MCAA Pay using 3904 derek.bennett@des.nh.gov W - pH 4-5 K-EDTA Project #: Z - other (specify) L-EDA TrustFund Londondorry DWGTF- LUNDONDERRY Other: SSOW#: Londonderry, NH 6 Total Number Matrix Sample (Waiwater, Type Sample (C=comp. PFC Sample Date G=grab) ST=Tissue, A=Air) Sample Identification Time Special Instructions/Note: Preservation Code: NOB_058 1200 6 Diw 114 LITEMFIELD RD 6 NUB 159 1725 DW 6 NOB_060 19 JUSTIN CIRCLE DW 16 OTTERSON RD NOIS-061 6 1110 Sample Disposal (A fee may be assesse Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Date lethod of Shipment NOBI DE Custody Seals Intact: Custody Seal No .: Cooler Temperature(s) °C and Other Remarks 915 50 6/14/19 A Yes A No

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TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 G - Amchior 5 - H2SO4 (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z-other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

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6/27/2019

Page

14 of 15

Job Number: 320-51329-12 SDG Number: SW-8 - Londonderry, NH

Login Number: 51329 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Greator. Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	
s 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 66mm (1/4").	True	
f 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	



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

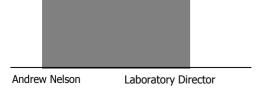
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB

RP190627023

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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.08 Londonderry WQ Eval.,

Londonderry, NH, #95160.00 **NOB 69**

sampled Date: 11-Jun-2019 03:50

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.13	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: <u>. </u>	
Sample Matrix A of Containers Sample Matrix # of Containers A for A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No No No No No No No N	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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"



Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Control #: 19060219

29 Hazen Drive, PO Box 95

Derek S. Bennett

Project Number: DWGTF Londonderry

Concord

NH 03302-0

Project Name: MTBE_01

Project Location:

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ma	atrix
19060219-008 N	NOB_069				6/11/20	19 3:50:00 PM	Grou	ndwater
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachlord	oethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroetha	ane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachlord	oethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroetha	ane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	е	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	е	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloroproper	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloroben	zene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloroprop	pane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichloroben	zene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylben	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chl	loropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	e	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenze		SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	е	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropar		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichloroben		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylben		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenze	ne	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenze		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropar		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 (FTBF)	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-Methy	vl Butane (TAMF)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
•	yl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propan		SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	.0. (. 2)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	ì	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentan		SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
Acetone	10110	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
Bromochlorometha	ane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromet		SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	and IC	SW 8260C	< 1 ug/L	4		6/17/2019	1	LauraB
וווטוטוווטוט		344 02000	< I ug/∟	•			I	LauraD

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Sample	Client Sample Id	entity			Start Date/T	ime Sampled:	Ma	atrix
19060219-008	NOB_069				6/11/20	19 3:50:00 PM	Grou	ındwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane		SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfid	e	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrach	loride	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-Dichloro	pethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloro	opropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobuta	idiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzei	ne	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 Chlo	ride	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	9	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzer	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofurar	1	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-Dichle	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichle	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	· !	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluorom	nethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride		SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB



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.

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

TestAmerica

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

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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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry SDG: SW-9 - Londonderry, NH

Qualifiers

LC	MS
Qua	lifie

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.

Value is EMPC (estimated maximum possible concentration).

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

Detection Limit (DoD/DOE) DL

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DL, RA, RE, IN

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** 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 MLMinimum Level (Dioxin) NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

PQL Practical Quantitation Limit

QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) **TEF TEQ** Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry SDG: SW-9 - Londonderry, NH

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 1.6° 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

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry 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	В	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	JI	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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry 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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.3	В	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	JI	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	В	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)					
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
1802 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

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry SDG: SW-9 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-50812-8	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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFBS	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(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
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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									

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

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry 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 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 299173 Prep Batch: 298925**

	MB	MB							
Analyte	Result	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-methylperfluorooctanesulfonamidoa cetic 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

(PFHxDA)						
,	MB	MB				
Isotope Dilution	%Recovery	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
1802 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

Matrix: Water							Prep Type: Total/NA
Analysis Batch: 299173							Prep Batch: 298925
-	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	38.7		ng/L		97	70 - 130

Eurofins TestAmerica, Sacramento

Client Sample ID: Lab Control Sample

Page 8 of 17

Lab Sample ID: LCS 320-298925/2-A

Matrix: Water

Analyte

(PFTeA)

(PFBS)

(PFHxS)

(PFHpS)

(PFOS)

(PFDS)

6:2 FTS

Analysis Batch: 299173

Perfluorobutanesulfonic acid

Perfluorohexanesulfonic acid

Perfluoroheptanesulfonic Acid

Perfluorooctanesulfonic acid

Perfluorodecanesulfonic acid

N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry SDG: SW-9 - Londonderry, NH

LCS LCS

34.8

32.8

39.3

36.6

35.8

38.9

39.4

39.6

38.8

Result Qualifier Unit

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

ng/L

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

Client Sample ID:	Lab	Contro	I Sample
	Prei	o Type:	Total/NA

73 - 133

63 - 123

68 - 128

67 - 127

68 - 128

67 - 127

66 - 126

67 - 127

72 - 132

98

90

103

99

93

97

104

103

97

D %Rec

Prep Batch: 298925	
%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	40.0	33.3	ng/L	83	60 - 120	
(PFUnA)						
Perfluorododecanoic acid	40.0	36.7	ng/L	92	71 - 131	
(PFDoA)						
Perfluorotridecanoic acid	40.0	36.5	ng/L	91	72 - 132	
(PFTriA)						
Perfluorotetradecanoic acid	40.0	34.2	ng/L	85	68 - 128	

35.4

36.4

38.1

37.1

38.6

40.0

37.9

Spike

Added

8:2 FTS			38.3
Perfluoro-n-hexadecanoic acid			40.0
(PFHxDA)			
		LCS	
Isotope Dilution	%Recovery	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
1802 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

Lab Sample ID: LCSD 320-298925/3-A

Matrix: Water

(PFHxDA)

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry SDG: SW-9 - Londonderry, NH

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

Client Sample ID: Lal	o Control S	ample Dup
	Prep Type	e: Total/NA
	Prep Bat	ch: 298925
	%Rec	RPD

Analysis Batch: 299173							Prep Ba	tch: 29	98925
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-methylperfluorooctanesulfona midoacetic 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	40.0	40.1		ng/L		100	72 - 132	3	30

LCSD	LC	SD
	_	

LCSD	LCSD	
%Recovery	Qualifier	Limits
81		50 - 150
88		50 - 150
85		50 - 150
88		50 - 150
87		50 - 150
83		50 - 150
88		50 - 150
86		50 - 150
85		50 - 150
71		50 - 150
81		50 - 150
44	*	50 - 150
84		50 - 150
76		50 - 150
84		50 - 150
96		50 - 150
80		50 - 150
	### Recovery ### 81 ### 88 ### 83 ### 88 ### 86 ### 84 ### 76 ### 84 96	88 85 88 87 83 88 86 85 71 81 44 * 84 76 84

QC Association Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry 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

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry SDG: SW-9 - Londonderry, NH

Client Sample ID: NOB_057 Lab Sample ID: 320-50812-8

Date Collected: 05/21/19 13:20 **Matrix: Water** Date Received: 05/31/19 09:20

Draw Turns	Batch	Batch	Dun	Dil	Initial	Final	Batch	Prepared	Amalyat	Lab
Prep Type Total/NA	Type Prep	Method 3535	Run	Factor	Amount 262.7 mL	10.0 mL	Number 298925	or Analyzed 06/04/19 06:51	Analyst 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

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry 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	er Expiration Date
ANAB	DoD			L2468	01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. 1	his list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo	namidoacetic
EPA 537(Mod)	3535	Water	Perflu	orobutanesulfonic acid (PFBS)
EPA 537(Mod)	3535	Water	Perflu	orobutanoic acid (PFBA)
EPA 537(Mod)	3535	Water	Perflu	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perflu	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perflu	orododecanoic acid (PF	DoA)
EPA 537(Mod)	3535	Water	Perflu	oroheptanesulfonic Acid	(PFHpS)
EPA 537(Mod)	3535	Water	Perflu	oroheptanoic acid (PFH	pA)
EPA 537(Mod)	3535	Water	Perflu	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFHx	A)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic acid	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFNA	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid (PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	eA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	riA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

Eurofins TestAmerica, Sacramento

Method Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-50812-8 Project/Site: DWGTF_Londonderry 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

6/12/2019

Sample Summary

Client: New Hampshire Dept of Environmental Serv

NOB_057

320-50812-8

Project/Site: DWGTF_Londonderry

Lab Sample ID Client Sample ID Matrix Collected Received Asset ID

05/21/19 13:20 05/31/19 09:20

Water

Job ID: 320-50812-8

SDG: SW-9 - Londonderry, NH

TestAmerica Sacramento

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

Chain of Custody Record

merico
1101100

THE LEADER IN ENVIRONMENTAL TESTING

c	lient Information	Las / E.	c. 15 so.		Lab Joh	nson, C	riette S		Carner Tracking No(s)	COC N	9.
CI	lent Contact: erek Bennett	Phone: 603 - 224			E-M		son@te	estamencainc.com		Page:	
Co	ompany	1001 KA-1	4187		One	T.	3011 € 10			Jab #:	
_	ew Hampshire Dept of Environ Services	Due Date Request	lad:			-		Analysis Re	quested	Proco	nution Codes
	ddress: 9 Hazen Drive	Due Date Request	ieo:						100 HORADON NOTO	A - HC	vation Codes: M - Hexans
	ny:	TAT Requested (d	lays):				n			B - Na	OH N-None
100	oncord late, Zip:	Standard TAT					alyte			D - Niti	
	H, 03302	PO#:				41	OAn	320-50812 Chain of (E - Nai F - Me	DH R - Na2S2O3
	nonei 603) 271-8520	Purchase Orde	r not require	d		6	ist (actionary	G - Am H - Ass	chlor S - H2SO4 orbic Acid T - TSP Dodecahyd
	mail: erek.bennett@des.nh.gov	WO#: Pay using 3904				S or N	Standard List (2'O'Analytes)	11111	TITITI	n J-lce	U - Acetone Vater V - MCAA
Pri	roject Name:	Project #:			_	o K	Stand			Containers C+ED	TA W - pH 4-5
T.	rustFund Londonderry DWGTF Londonderry	SSOW#.				yes (Yes	AS, S			Other:	2 - omer (specify)
L	ondonderry, NH	accivir.				Sam	D) PF			ō	
Si	ample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sealid, Demaste/bil, BT=Tlasue, A=Air	X Field Filtered Sample (PFC IDA - (MOD) PFAS,			X Total Number	Special Instructions/Note:
	MTBE-1122	5/21/19	0910	6	Dw	W	×			21	Tokanel Dr.
	NOB- 051	5/21/19	0945	6	DW	W	x				Mont Vernon Dr.
	NOB-052	5/21/19	1040	6	SW	M	x			500	
	NOB-053	5/21/19	1100	6	54	W	x			Sia-	
	NOB-054	5/21/19	1115-	6	Sω	U	X			500	- 3
	NOB-055	5/21/19	1150	b	SW	W	ю			Sw	-4
	NOB-056	5/21/19	1240	6	Sw	M	×			Sw.	5
	NOB-057	5/21/19	1320	6	SW	W	×			Sw	-9
	Field Dlank	5/21/19	1325	6	الا	M	×			Lab	supplied Alak
P	Possible Hazard Identification	П				Sa	mple D	isposal (A fee may be	assessed if samples are ret	ained long	er than 1 month)
Di	Non-Hazard Flammable Skin Irritant Poist leliverable Requested: I, II, III, IV, Other (specify)	on B - Unkn	own — F	Radiological		Sp	Reti	urn To Client Structions/QC Requireme	Disposal By Lab A	rchive For	Months
_	mpty Kit Relinquished by:		Date:			Time:		00.1	Method of Shipment:		
	elinquished by:	5/12//4	0700		Company NUBIS		Receive	TOES COLL SA	174 Date/Time 5/22/19	141	42 Company NHDES
He	elinquistiegiby:	5/30/19	14:15	<	Company DES		Receive	el bus	33°C) Date/Time / 5/30/19	14:	Company
Re	elinquisheg by:	Date/Time:	17.1-		Company		Receive	DOIN COOL	Date/June 5/3//		20 STA-ST
2	Custody Seals Intact: Custody Seal No.: 7410	-0%					Cooler 1	emperature(s) °C and Other R		, ,	00 1000
_	containers labeled as "NOB_S4" 1	1	1	^	1		_	./		1 -	Ver: 08/04/2016

6/12/2019

Page 16 of 17

Job Number: 320-50812-8

SDG Number: SW-9 - Londonderry, NH

Login Number: 50812 List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Client: New Hampshire Dept of Environmental Serv

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Eurofins TestAmerica, Sacramento



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:		Water	21-May-19 09:10	21-May-19 15:45
119052561.02	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:	_	Water	21-May-19 09:45	21-May-19 15:45
119052561.03	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 10:40	21-May-19 15:45
119052561.04	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		Water	21-May-19 11:00	21-May-19 15:45
119052561.05	Londonderry GW Quality Eval., Londonderry, NH, #95160.00:		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:		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:



NELSON ANALYTICAL LAB

RP190606015

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

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

Date Reported:

06-Jun-19 08:17

REPORT OF ANALYSIS

119052561.08

Londonderry GW Quality Eval., Londonderry, NH, #95160.00 Surface Water, NOB_057

sampled Date:	21-May-2019 01:20

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	Analyzed	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	05/22/2019 15:50	SM 4500 NO3 D	NH

Reporting

Nitrite

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	< 0.01	0.01	mg/L	05/22/2019 16:50	SM 4500 NO2B	NH

Metals by ICP/MS

<u>Analyte</u>	Result	Reporting <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.15	0.05	mg/L	05/25/2019 14:00	HACH 8190	SUB2

AQUARIAN ANALYTICAL/I/AID5 - 256 153 West Road
Phone: (603)783-9097

A Division of Noteby Analytical LLC

A Division of Noteby Analytical LLC

A Division of Nelson Analytical, LLC

Turnaround Requirements	(check one	<u>,,</u>					-				+											-									
				<u> </u>		_		_		==	+	_					ject	into	orma	atio	n							_			
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	les Need Prior Ame Day Turnard One Day Turnard Iwo Day Turnard Tee Day Turnard Normal Turnard	und und und und	'al	,	Project #: 95160. C Project Name: London desiry Town/Site: London desir Sampler: Lad Lad Company: Alphis - 1					7/						Project Manager: Mark Henderson Report To: Mark Henderson Invoice To: Hugarts Payable Phone: 603-124-4182 E-mail: MHenderson Englishers							vo 49.	<u> </u>							
Sample Informa	ition	_=		٧	OCs			S	voc	s			Pet	trole	um			Ме	tals		٧	Vet (Che	nist	ry / I	Inorg	anio	s		ı	
NOB-053 NOB-054 NOB-055 NOB-056 NOB-056	Collection Date/Time 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19 5/21/19	200 200 200 200 200 200 200 200 200	1 1 2 2 2 2 3	VOCs EPA 8260B/8260C Select Parameter only:		1.1-Luxatile / EUB 3280B SIM low (evel	SVOCs EPA 8270C/8270D Full ist/ PAH only	PCB Andars EPA 8082A / 608	Pesticides EPA 608 18 / 608	Herbicides EPA 8151A	Dinking Water SOCs (circle) 526.2 / 504.17 5087 515.1	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 80/5B Gasoline Range Organics	МАОЕР ЕРН	MADEP VPH	Petroleum Fingerprint Analysis	XXXXX metals (clrole)	Ni / Cu / Zn / Fe/ Mn (circle) Total / Dissolved	Sodium / Calcium / Magnesium Totat / Dissolved		X X X X X Subject Subject Subject Flooride / Subject Flooride / Subject Flooride	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 1684A HEM Oil and Grease	Total Dissolved Solids (TDS) / Total Suspended Solids (TSS)		XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	uarial 1 2 3 7 7	n ID
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Date/Time: 5/21/19 154/5 Date/Time: Date/Time: Date/Time:					Received by: 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					ISO 17025 accreditation required?YesNo EDD required?YesNo MCP Compliance required?YesNo Is this NH "Odd Fund" related?YesNo															
									_						Receipt Temperature:C						Does a price quote apply? Yes No FRM-AQ-SAMPLESUBMISSIONFORM-030916										



317 Elm Street Milford, NH 03055

Lab ID: 19050392

Date Received: 5/23/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #: 19050392 Lab ID: 19050392

29 Hazen Drive, PO Box 95

Project Number: **DWGTF Londonderry** Date: 6/24/2019

Concord NH 03302-0

Project Name:

MTBE_01

Project Location: Londonderry, NH

19050392 Lab ID:

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 E											

Sample	Method	Client Identity	Matrix	Analyst
19050392-001	EPA 524.2	Tripblank	Drinking water	LauraB

Comment: no comment

^{*} Blank comment sections denote "No Comment"



Analytical Results

Lab ID:

Date:

19050392

6/25/2019

NHDES MtBE Remediation Bureau

Control #: 19050392

29 Hazen Drive, PO Box 95

Project Number: DWGTF Londonderry

Concord

Derek S. Bennett

NH 03302-0

Project Name: MTBE_01

Project Location: SW-9

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Matrix	
19050392-009	NOB_057			<u> </u>	5/21/2019 1:20:00 PM		Grou	ndwater
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	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-Tetrach	loroethane	SW 8260C	< 0.5 ug/L	2		5/31/2019	0.5	LauraB
1,1,2-Trichloroe		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
1,1-Dichloroeth	ane	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,1-Dichloroeth	ene	SW 8260C	< 1 ug/L	7		5/31/2019	1	LauraB
1,1-Dichloropro	pene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorob	enzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,3-Trichlorop	ropane	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2,4-Trichlorob	enzene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
1,2,4-Trimethyll	benzene	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
1,2-Dibromo-3-		SW 8260C	< 2 ug/L			5/31/2019	2	LauraB
1,2-Dibromoeth	ane	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-Dichlorober		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
	ethyl Butane (TAME)	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
-	ethyl 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
		5 52500	- 1 ag/ =				•	

Page 1 of 3



Parameter Method Result MCL Qualifier Analyzed Analyzed RDL Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed RDL Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed Analyzed Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed RDL Analyzed R	Sample	Client Sample Id	lentity			Start Date/T	ime Sampled:	Ma	ntrix
Parameter Method Result MCL Qualifier Analyzed RDL Anal Bromomethane SW 8260C < 1 ug/L 10 551/2019 1 Lau Carbon Disulfide SW 8260C < 1 ug/L 5 551/2019 1 Lau Carbon Tetrachloride SW 8260C < 1 ug/L 5 551/2019 1 Lau Chlorobenzene SW 8260C < 1 ug/L 100 551/2019 1 Lau Chlorodethane SW 8260C < 1 ug/L 70 551/2019 1 Lau Chlorodethane SW 8260C < 1 ug/L 70 551/2019 1 Lau Chlorodethane SW 8260C < 1 ug/L 70 551/2019 1 Lau Clis-1,2-Dichlorodethene SW 8260C < 1 ug/L 70 551/2019 0.4 Lau Clis-1,3-Dichlorodethane SW 8260C < 1 ug/L 70 551/2019 0.4 Lau Dibromochloromethane SW 8260C < 1 ug/L	19050392-009	NOB_057						Groundwater	
Carbon Disulfide SW 8260C < 1 ug/L 5 5312019 1 Lau Chlorobenzene SW 8260C < 1 ug/L 5 5312019 1 Lau Chlorobenzene SW 8260C < 1 ug/L 5 5312019 1 Lau Chlorobenzene SW 8260C < 1 ug/L 5312019 1 Lau Chlorobenzene SW 8260C < 1 ug/L 5312019 1 Lau Chloroform SW 8260C < 1 ug/L 70 5312019 1 Lau Chloroform SW 8260C < 1 ug/L 70 5312019 1 Lau Chloroform SW 8260C < 1 ug/L 70 5312019 1 Lau Chloroform SW 8260C < 1 ug/L 70 5312019 1 Lau Chloroformethane SW 8260C < 1 ug/L 70 5312019 1 Lau Cis-1,3-Dichloropropene SW 8260C < 1 ug/L 70 5312019 1 Lau Cis-1,3-Dichloropropene SW 8260C < 1 ug/L 70 5312019 1 Lau Dibromochloromethane SW 8260C < 1 ug/L 2 5312019 1 Lau Dibromochloromethane SW 8260C < 1 ug/L 2 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloropropene SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroffluoromethane SW 8260C < 1 ug/L 6 5312019 1 Lau Dichloroppiphenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Sopropyl Enter SW 8260C < 1 ug/L 700 6312019 1 Lau Sopropylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Sopropylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Methylene Chloride SW 8260C < 1 ug/L 700 6312019 1 Lau Methylene Chloride SW 8260C < 1 ug/L 700 6312019 1 Lau Methylene Chloride SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 700 6312019 1 Lau Tert-Butylbenzene SW 8260C <	Parameter		Method	Result	MCL	Qualifier		RDL	Analyst
Carbon Tetrachloride SW 8260C	Bromomethane		SW 8260C	< 1 ug/L	10		5/31/2019	1	LauraB
Chlorobenzene SW 8260C			SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Chloroethane SW 8260C < 1 ug/L	Carbon Tetrach	loride	SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Chloroform SW 8260C < 1 ug/L 70	Chlorobenzene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Ciloromethane SW 8260C	Chloroethane		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Cis-1,2-Dichloroethene	Chloroform		SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Cis-1,3-Dichloropropene	Chloromethane		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Dibromochloromethane SW 8260C < 1 ug/L 2 5/31/2019 1 Lau Dibromochloromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 1400 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichloropyl Ether SW 8260C < 1 ug/L 5/31/2019 1 Lau Ethylbenzene SW 8260C < 1 ug/L 700 5/31/2019 1 Lau Hexachlorobutadiene SW 8260C < 1 ug/L 700 5/31/2019 1 Lau Sporppylbenzene SW 8260C < 1 ug/L 700 5/31/2019 1 Lau M/P-Xylene SW 8260C < 1 ug/L 5/31/2019 1 Lau M/P-Xylene SW 8260C < 1 ug/L 5/31/2019 1 Lau M/P-Xylene SW 8260C < 1 ug/L 5/31/2019 1 Lau M/P-Xylene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Terta-Buty	Cis-1,2-Dichloro	ethene	SW 8260C	< 1 ug/L	70		5/31/2019	1	LauraB
Dibromomethane SW 8260C < 1 ug/L 1400 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 1400 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 700 5/31/2019 1 Lau Dichlorodifluoromethane SW 8260C < 1 ug/L 700 5/31/2019 1 Lau Hexachlorobutadiene SW 8260C < 0.5 ug/L 0.6 5/31/2019 0.5 Lau Biopropylbenzene SW 8260C < 1 ug/L 5/31/2019 0.5 Lau M/P-Xylene SW 8260C < 1 ug/L 10000 5/31/2019 1 Lau Methylene Chloride SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Methylene Chloride SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Naphthalene SW 8260C < 1 ug/L 140 5/31/2019 1 Lau Naphthalene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tertans-1,2-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tertans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tran	Cis-1,3-Dichlord	propene	SW 8260C	< 0.4 ug/L	0.4		5/31/2019	0.4	LauraB
Dichlorodifluoromethane SW 8260C <1 ug/L Diethyl Ether SW 8260C <1 ug/L Diethyl Ether SW 8260C <1 ug/L Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau Diethyl Ether SW 8260C <1 ug/L Figal 2019 1 Lau MP-xylene SW 8260C <1 ug/L Figal 2019 Sigal 2019 1 Lau MP-xylene SW 8260C <1 ug/L Figal 2019 Figal 20	Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB
Diethyl Ether SW 8260C < 1 ug/L	Dibromomethar	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Di-Isopropyl Ether SW 8260C < 1 ug/L 700 5/31/2019 1 Lau Ethylbenzene SW 8260C < 1 ug/L 700 5/31/2019 1 Lau Hexachlorobutadiene SW 8260C < 0.5 ug/L 0.6 5/31/2019 0.5 Lau Isopropylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau M/P-xylene SW 8260C < 1 ug/L 10000 5/31/2019 1 Lau Methylene Chloride SW 8260C < 5 ug/L 5 5/31/2019 5 Lau Naphthalene SW 8260C < 1 ug/L 140 5/31/2019 1 Lau Naphthalene SW 8260C < 1 ug/L 140 5/31/2019 1 Lau N-Butylbenzene SW 8260C < 1 ug/L 140 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylfororethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Lau Tertahydrofuran SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C <	Dichlorodifluoromethane		SW 8260C	< 1 ug/L	1400		5/31/2019	1	LauraB
Ethylbenzene SW 8260C < 1 ug/L 700	Diethyl Ether		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Hexachlorobutadiene SW 8260C < 0.5 ug/L	Di-Isopropyl Eth	ner	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Isopropy Isop	Ethylbenzene		SW 8260C	< 1 ug/L	700		5/31/2019	1	LauraB
M/P-Xylene SW 8260C < 1 ug/L 10000 5/31/2019 1 Lau Methylene Chloride SW 8260C < 5 ug/L	Hexachlorobutadiene		SW 8260C	< 0.5 ug/L	0.6		5/31/2019	0.5	LauraB
Methylene Chloride SW 8260C < 5 ug/L 5 5/31/2019 5 Lau Naphthalene SW 8260C < 1 ug/L	Isopropylbenzene		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Nathrity of thirds SW 8260C < 1 ug/L 140 5/31/2019 1 Lau N-Butylbenzene SW 8260C < 1 ug/L			SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
N-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 10000 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tetrachloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tetrachloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 1 ug/L 1300 5/31/2019 1 Lau Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5 5/31/2019 0.4 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichloroethene SW 82	Methylene Chloride		SW 8260C	< 5 ug/L	5		5/31/2019	5	LauraB
N-Propylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 10000 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tetrachloroethene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 1 ug/L 1300 5/31/2019 1 Lau Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlor	Naphthalene		SW 8260C	< 1 ug/L	140		5/31/2019	1	LauraB
O-Xylene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Sec-Butylbenzene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Styrene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tetrachloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrachloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 12 ug/L 1300 5/31/2019 12 Lau Toluene SW 8260C < 1 ug/L 1000 5/31/2019 12 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane	N-Butylbenzene		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Sec-Butylbenzene SW 8260C < 1 ug/L	•		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Styrene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Tert-Butylbenzene SW 8260C < 1 ug/L			SW 8260C	< 1 ug/L	10000		5/31/2019	1	LauraB
Tert-Butylbenzene SW 8260C < 1 ug/L 5/31/2019 1 Lau Tetrachloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 12 ug/L 1300 5/31/2019 12 Lau Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L 5 5/31/2019 0.4 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Lau	Sec-Butylbenze	ne	SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Tetrachloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Tetrahydrofuran SW 8260C < 12 ug/L 1300 5/31/2019 12 Lau Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L 5/31/2019 0.4 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau	Styrene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Tetrahydrofuran SW 8260C < 12 ug/L 1300 5/31/2019 12 Lau Toluene SW 8260C < 1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C < 1 ug/L 100 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L 5/31/2019 0.4 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane	Tert-Butylbenzene		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
Toluene SW 8260C <1 ug/L 1000 5/31/2019 1 Lau Trans-1,2-Dichloroethene SW 8260C <1 ug/L 100 5/31/2019 1 Lau Trans-1,3-Dichloropropene SW 8260C <0.4 ug/L 5/31/2019 0.4 Lau Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Lau Trichloroethene SW 8260C <1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C <1 ug/L 5 5/31/2019 1 Lau	Tetrachloroethene		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Trans-1,2-Dichloroethene SW 8260C < 1 ug/L	Tetrahydrofuran		SW 8260C	< 12 ug/L	1300		5/31/2019	12	LauraB
Trans-1,3-Dichloropropene SW 8260C < 0.4 ug/L $5/31/2019$ 0.4 Lau Trichloroethene SW 8260C < 1 ug/L 5 $5/31/2019$ 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L $5/31/2019$ 1 Lau	Toluene		SW 8260C	< 1 ug/L	1000		5/31/2019	1	LauraB
Trichloroethene SW 8260C < 1 ug/L 5 5/31/2019 1 Lau Trichlorofluoromethane SW 8260C < 1 ug/L	Trans-1,2-Dichloroethene		SW 8260C	< 1 ug/L	100		5/31/2019	1	LauraB
Trichlorofluoromethane SW 8260C < 1 ug/L 5/31/2019 1 Lau	Trans-1,3-Dichloropropene		SW 8260C	< 0.4 ug/L			5/31/2019	0.4	LauraB
1 244	Trichloroethene		SW 8260C	< 1 ug/L	5		5/31/2019	1	LauraB
Vinyl Chloride SW 8260C < 1 ug/L ² 5/31/2019 1 Lau	Trichlorofluoromethane		SW 8260C	< 1 ug/L			5/31/2019	1	LauraB
	Vinyl Chloride		SW 8260C	< 1 ug/L	2		5/31/2019	1	LauraB



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: 320-51329-11

Laboratory Sample Delivery Group: SW-10 - Londonderry, NH Client Project/Site: DWGTF_Londonderry

For:

🔅 eurofins

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

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Quality Control

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry SDG: SW-10 - Londonderry, NH

Qualifiers

PQL

QC

RL

RER

RPD

TEF **TEQ**

LCMS Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	Compound was found in the blank and sample.
1	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)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry SDG: SW-10 - Londonderry, NH

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 1.0° C and 2.4° 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" gualifier 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

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry 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	В —	1.9	0.33	ng/L		_	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	JI	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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry SDG: SW-10 - Londonderry, NH

Client Sample ID: NOB_068 Lab Sample ID: 320-51329-11

Date Collected: 06/11/19 15:20 **Matrix: Water** Date Received: 06/14/19 09:15

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	4.6	В	1.9	0.33	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluoropentanoic acid (PFPeA)	4.3		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorohexanoic acid (PFHxA)	5.2		1.9	0.55	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluoroheptanoic acid (PFHpA)	3.3		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorooctanoic acid (PFOA)	12		1.9	0.81	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorononanoic acid (PFNA)	1.1	JI	1.9	0.26	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorodecanoic acid (PFDA)	0.40	J	1.9	0.30	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorohexanesulfonic acid (PFHxS)	2.2	В	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorooctanesulfonic acid (PFOS)	4.2		1.9		ng/L		06/17/19 06:39	06/18/19 07:56	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 07:56	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9		ng/L			06/18/19 07:56	
6:2 FTS	ND		9.5		ng/L			06/18/19 07:56	
8:2 FTS	ND		1.9		ng/L			06/18/19 07:56	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.85	ng/L		06/17/19 06:39	06/18/19 07:56	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	56		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C5 PFPeA	83		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C2 PFHxA	84		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C4 PFHpA	93		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C4 PFOA	91		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C5 PFNA	91		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C2 PFDA	98		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C2 PFUnA	92		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C2 PFDoA	89		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C2 PFTeDA	51		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C3 PFBS	84		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C2 PFHxDA	17	*	50 - 150				06/17/19 06:39	06/18/19 07:56	
1802 PFHxS	83		50 - 150				06/17/19 06:39	06/18/19 07:56	
13C4 PFOS	81		50 - 150				06/17/19 06:39	06/18/19 07:56	
d3-NMeFOSAA	101		50 - 150				06/17/19 06:39	06/18/19 07:56	
M2-6:2 FTS	102		50 - 150				06/17/19 06:39	06/18/19 07:56	
M2-8:2 FTS	92		50 ₋ 150					06/18/19 07:56	

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry SDG: SW-10 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-11	NOB_068	56	83	84	93	91	91	98	92
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-11	NOB_068	89	51	84	17 *	83	81	101	102
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS		•		•		,	
Lab Sample ID	Client Sample ID	(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 = 1802 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

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry 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**

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-11 Project/Site: DWGTF_Londonderry SDG: SW-10 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

uthority	Program	1	EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	ort, but the laboratory	y is not certified by the	e governing authority. Th	is list may include analytes for which
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfona IMeFOSAA)	midoacetic
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (Pl	FBS)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid (P	FDS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	prododecanoic acid (PFD	oA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (I	PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA	A)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (P	FHxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid ((PFHxDA)
EPA 537(Mod)	3535	Water	Perfluc	orononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PI	FOS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA	A)
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PF	TeA)
EPA 537(Mod)	3535	Water	Perfluc	orotridecanoic acid (PFTri	A)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFU	nA)

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

Protocol	Laboratory

SDG: SW-10 - Londonderry, NH

Job ID: 320-51329-11

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

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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	

880 Riverside Parkway West Sacramento, CA 95605 **Chain of Custody Record**

<u>TestAmerica</u>

4E	LEADER I	NENV	RONMENTAL	TESTING

Phone (916) 737-5600 Fax (916) 372-1059													THE LEADER IN ENVIRONMENTAL TESTING
Client Information	DHB/				Johnson, Orlette S						arrier Tracking No(s)		COC No.
Client Contact: Derek Bennett	Phone: 65 449-20	107/			Mail: rlette.jo	ohnse	on@testar	imericali	nc.com				Page:
Company New Hampshire Dept of Environ Services								А	nalysis F	Reques	ted		Job #:
Address:	Due Date Request	led:			11		TT						Preservation Codes:
29 Hazen Drive City:	TAT Requested (d.	lavs):			+1				1.7	11			A - HCL M - Hexane B - NaOH N - None
Concord					11		rtes)		X				C - Zn Acetate O - AsNaO2
State, Zip: NH, 03302	Standard TAT						Analy		13	4			D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
Phone: (603) 271-8520	PO.#. Purchase Order	r not require	art				Standard List (A Analytes)	_	na				F - MeOH R - Na2S2O3 G - Amchior S - H2SO4
Email:	WO#:		10		- No	=	I Lis	1	an	1			H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone
derek.bennett@des.nh.gov Project Name:	Pay using 3904				les o	or No)	anda		2			l sala	
TrustFund_Londondorry DWGTF_ LONDONDORRY						ves c	15, 51		23			contained	L - EDA Z - other (specify)
Site: Londonderry, NH	SSOW#:				Samp	SD (Yes) PFA		18	1		95	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)		Field Filtered	Perform MS/M	PFC IDA - (MOD) PFAS,		9			Total Number	
		> <	Preserva	tion Code:	X	X							
NOB_056	6-3 19	1200	6	Div	N		X						114 LOCHFIELD RD
NOB 259	6-3-19	1225	Ŀ	DW	N		X						7 ROLLING RIDGE RD
NOB_060	6-5-19	945	6	Dui	N		X						19 JUSTIN CIRCLE
NoB-061	6-5-19	1110	6	DW	N		X						16 OTTERSON RD
					1						11	1 1 1	J
					\forall								
					++	Ħ		===			- 1444		
					++		++				- 111111111		
Possible Hazard Identification					+	Sam	ple Dispo	osal (A	fee may b	e assess	E	329 Chain of	Custody
	ison B Unkne	own \square_I	Radiological				Return		n 🗅	Dispos	al By Lab	☐ Arci	hive For Months
Deliverable Requested: I, II, III, IV, Other (specify)						Spec	cial Instruc	ctions/Q	C Requirer	ments:			
Empty Kit Relinquished by:		Date:			Tim	ne:		2	1 0		Method of Ship	ment	
Relinquished by:	Date/Time: 6-5-19 /15	530		Company NOBIS	c	P	Received by:	1	UN	OF HAN	rie Dat	te/Time;	15:30 23 Company
Helipprojethed by:	Date/Time		2 -	Company		1	Shi	201	. 1	11	Dat Dat	erime lic	Company Company
Refinithished by:	0/13/19 Date/Time:	143		DP) Company		F	3/1/2 Regeived by		Certe	- 4c	Dat	e/Time:	Company
Custody Seals Intact: Custody Seal No.:	1125					16	DZU	u		5		114119	10.2 12000
A Yes A No						-	ooier remp	perature(s)	°C and bife	1 O	6,7.0	_	915 50 6/14/19

Page 13 of 15











Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 G - Amchior 5 - H2SO4 (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z-other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

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6/27/2019

Page

14 of 15

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-11 SDG Number: SW-10 - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Login Number: 51329

Creator: Oropeza, Salvador

Answer	Comment
True	
True	624536, 806430
True	
N/A	
True	
	True True True True True True True True



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

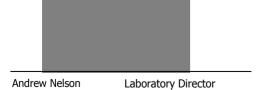
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB

RP190627023

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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.07

Londonderry WQ Eval., Londonderry, NH, #95160.00 **NOB 68**

sampled Date: 11-Jun-2019 03:20

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.14	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

NOB_062 5 Alisan La. 6-11-18/083 DW / NOB_063 29 Beason St. 6-11-18/015 DW / NOB_064 68 Alexander Pag-11-18/055 DW / NOB_065 6-11-18/13555W 2 NOB_066 6-11-18/14105W 2	<u>. </u>
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. Sample Information Vocs Svocs Petroleum Sample Information	<u>. </u>
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. Sample Information Sample Information Sample Information Project Name: Town/Site: Sampler: <u>. </u>	
Sample Matrix A of Containers Sample Matrix # of Containers A for A for A	
NOCS EPAS SOBRESSOR Sample Matrix Sample Matrix Sample Matrix Sample Matrix African Personal Containers VICOS EPAS SOBRESSOR Solect Parameter only. 14-docsare / EPAS SOBRESSOR NCCS EPAS SOB	
NOB - 067 6-11-18/1445 3W 2 X X X X X X X X X X X X X X X X X X	Aquarian ID 2 3 4 5 5 7
Relinquished by: Date/Time: Received by: Received by: Received by: Received by: PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required?YesNo Received by: Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No No No No No No No N	ete):



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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

Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

29 Hazen Drive, PO Box 95

Derek S. Bennett

Concord

Control #: 19060219

Project Number: DWGTF Londonderry

NH 03302-0 Project Name: MTBE_01

Project Location:

Sample	Client Sample Identit	у			Start Date/T	ime Sampled:	Ма	ıtrix
19060219-007 N	NOB_068				6/11/20	19 3:20:00 PM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
1,1,1,2-Tetrachlor	oethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroetha	ane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachlor	oethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroetha	ane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethane	е	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethene	е	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloroproper	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloroben	zene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloroprop	pane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichloroben	zene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylber	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Chl	loropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethane	е	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenze	ne	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethane	е	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropar	ne	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichloroben	zene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylber	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenze	ne	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenze	ne	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropar	ne	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-Methy	yl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Methoxy-2-Meth	yl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propan	nol (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-Pentan	none	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
Bromochlorometha	ane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichloromet	thane	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 Id	entity			Start Date/T	ime Sampled:	Ма	atrix
19060219-007	NOB_068				6/11/20	19 3:20:00 PM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane	•	SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfid	le	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrach	loride	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-Dichlore	oethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichlore	opropene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloror	methane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethai	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobuta	adiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenze	ne	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 Chlo	oride	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	е	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzei	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofurar	า	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-Dichl	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichl	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	•	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoror	nethane	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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0

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13

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

TestAmerica

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

Wester & Character

Authorized for release by: 6/27/2019 8:45:51 AM

Orlette Johnson, Senior Project Manager (484)685-0864

orlette.johnson@testamericainc.com

LINKS

Review your project results through Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry SDG: SW-11 - Londonderry, NH

Qualifiers

RPD

TEF

TEQ

LCMS Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	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.
a	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

6/27/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry SDG: SW-11 - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry 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		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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry SDG: SW-11 - Londonderry, NH

Client Sample ID: NOB_070 Lab Sample ID: 320-51329-13

Date Collected: 06/12/19 09:25 **Matrix: Water** Date Received: 06/14/19 09:15

Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	5.8	В	1.9	0.34	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluoropentanoic acid (PFPeA)	7.3		1.9	0.47	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorohexanoic acid (PFHxA)	8.9		1.9	0.56	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluoroheptanoic acid (PFHpA)	7.4		1.9	0.24	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorooctanoic acid (PFOA)	42		1.9	0.82	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.26	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorodecanoic acid (PFDA)	0.31	J	1.9	0.30	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorobutanesulfonic acid (PFBS)	3.5		1.9	0.19	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorohexanesulfonic acid (PFHxS)	2.6	В	1.9	0.16	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorooctanesulfonic acid (PFOS)	3.9		1.9		ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		06/17/19 06:39	06/18/19 08:12	
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	1.2	ng/L		06/17/19 06:39	06/18/19 08:12	
6:2 FTS	ND		9.6		ng/L		06/17/19 06:39	06/18/19 08:12	
8:2 FTS	ND		1.9	0.36	ng/L		06/17/19 06:39	06/18/19 08:12	
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.86	ng/L		06/17/19 06:39	06/18/19 08:12	
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	59		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C5 PFPeA	85		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C2 PFHxA	86		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C4 PFHpA	90		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C4 PFOA	86		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C5 PFNA	90		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C2 PFDA	98		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C2 PFUnA	94		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C2 PFDoA	86		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C2 PFTeDA	50		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C3 PFBS	84		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C2 PFHxDA	19	*	50 - 150				06/17/19 06:39	06/18/19 08:12	
1802 PFHxS	84		50 - 150				06/17/19 06:39	06/18/19 08:12	
13C4 PFOS	81		50 ₋ 150					06/18/19 08:12	
d3-NMeFOSAA	98		50 - 150					06/18/19 08:12	
M2-6:2 FTS	97		50 - 150					06/18/19 08:12	
M2-8:2 FTS	91		50 ₋ 150					06/18/19 08:12	

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry SDG: SW-11 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-13	NOB_070	59	85	86	90	86	90	98	94
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-13	NOB_070	86	50	84	19 *	84	81	98	97
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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 = 1802 PFHxS

PFOS = 13C4 PFOS

d3-NMeFOSAA = d3-NMeFOSAA

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

6/27/2019

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
3	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

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry SDG: SW-11 - Londonderry, NH

Client Sample ID: NOB_070

Lab Sample ID: 320-51329-13 Date Collected: 06/12/19 09:25 **Matrix: Water** Date Received: 06/14/19 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-13 Project/Site: DWGTF_Londonderry SDG: SW-11 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

uthority	Program		EPA Region	Identification Number	Expiration Date
NAB	DoD			L2468	01-20-21
The following analytes the agency does not do	•	rt, but the laboratory	is not certified by the	e governing authority. This	list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	е	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfonam IMeFOSAA)	nidoacetic
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (PFE	3S)
EPA 537(Mod)	3535	Water	Perfluc	probutanoic acid (PFBA)	
EPA 537(Mod)	3535	Water	Perfluc	prodecanesulfonic acid (PF	DS)
EPA 537(Mod)	3535	Water	Perfluc	prodecanoic acid (PFDA)	
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PFDoA	A)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid (Pf	FHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)	
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (P	FHxDA)
EPA 537(Mod)	3535	Water	Perfluc	prononanoic acid (PFNA)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PFC	OS)
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)	
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA)	
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PFT)	eA)
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTriA)
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFUnA	A)

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

Eurofins TestAmerica, Sacramento

6/27/2019

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

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Sample Summary

Collected

06/12/19 09:25 06/14/19 09:15

Matrix

Water

Client: New Hampshire Dept of Environmental Serv

Client Sample ID

Project/Site: DWGTF_Londonderry

NOB_070

Lab Sample ID

320-51329-13

Job ID: 320-51329-13 SDG: SW-11 - Londonderry, NH

Received	Asset ID	

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880 Riverside Parkway
West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

hone (916) 737-5600 Fax (916) 372-1059					
	Samplet: /	Lab PM:	Carrier Tracking No(s)	0001	
	3/2/	Tableson Catalan C	The state of the s	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	

Client Information Client Contact: Derek Bennett orlette johnson@testamericainc.com 449-2007 **Analysis Requested** New Hampshire Dept of Environ Services Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH N - None IDA - (MOD) PFAS, Standard List (A Analytes) Concord C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P-Na2O4S E - NaHSO4 Q - Na2SO3 NH, 03302 F-MeOH R - Na2S2O3 Phone: G - Amchior 5-H2SO4 Purchase Order not required (603) 271-8520 T - TSP Dodecahydrate H - Ascarbic Acid - Ice U - Acetone Email MS/MSD (Yes or No) J - DI Water V - MCAA Pay using 3904 derek.bennett@des.nh.gov W - pH 4-5 K-EDTA Project #: Z - other (specify) L-EDA TrustFund Londondorry DWGTF- LONDONDERRY Other: SSOW#: Londonderry, NH 6 Total Number Matrix Sample (Waiwater, Type Sample (C=comp. PFC Sample Date G=grab) ST=Tissue, A=Air) Sample Identification Time Special Instructions/Note: Preservation Code: NOB_058 1200 6 Diw 114 LITEMFIELD RD 6 NOB 159 1725 DW 6 NOB_060 19 JUSTIN CIRCLE DW 16 OTTERSON RD NOIS-061 6 1110 Sample Disposal (A fee may be assesse Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Date lethod of Shipment NOBI DE Custody Seals Intact: Custody Seal No .: Cooler Temperature(s) °C and Other Remarks 915 50 6/14/19 A Yes A No

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TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 G - Amchior 5 - H2SO4 (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z-other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

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6/27/2019

Page

14 of 15

Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-13 SDG Number: SW-11 - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 51329 List Number: 1

Creator: Oropeza, Salvador

Creator. Cropeza, Sarvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



NELSON ANALYTICAL LAB

RP190627025

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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061387.01

Londonderry WQ Eval., Londonderry, NH, #95160.00 **NOB 070**

sampled Date: 12-Jun-2019 09:25

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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	ma/L	06/26/2019 15:15	EPA 200.8	RT

Total Phosphate

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.15	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

Date Rec'd: 1019 1040 6. AQUARIAN ANALYTICALIABL - 138 2 153 West Road Rec'd by Canterbury, NH 03224 Phone: (603)783-9097 RP190627025 E-mail: frontdesk@aquarianlabs.com A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4122
E-mail: MHenderson@ nobis-group.com Project #: 95/60.00 Please inquire about Same Day Turnaround Project Name: London Rerry W. Eval.
Town/Site: London Serry, NH rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround Sampler: R. Rizz effort, we will not charge Three Day Turnaround Company: Nobis Group a rush fee. Please call ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics of Containers Collection Sample ID Date/Time Aduarian ID NOB- 070 Date/Time: 1040 Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required? ____Yes___No Date/Time: Relinguished by: Received by: EDD required? _____Yes____No Laboratory Supplied Containers? Yes No. MCP Compliance required?____Yes___ Containers Intact/Properly Labeled Yes No. Relinquished by: Date/Time: Is this NH "Odd Fund" related?____Yes___No Received by: Were samples delivered on ica?: Yes No Does a price quote apply?____Yes____No Receipt Temperature: FRM-AO-SAMPI FSHRMISSIONFORM-030016



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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"



Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Control #: 19060219

29 Hazen Drive, PO Box 95

Derek S. Bennett

Project Number: DWGTF Londonderry

Concord

NH 03302-0

Project Name: MTBE_01

Project Location:

Sample	Client Sample Identity	у			Start Date/T	ime Sampled:	Ma	atrix
19060219-009	NOB_070				6/11/20	19 9:25:00 AM	AM Groundwate	
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrachlor	roethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroeth	ane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrachlor	roethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroeth	ane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroethan	ie	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroethen	ie	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloroprope	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorober	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichloropro	pane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorober	nzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethylbe	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2-Dibromo-3-Ch	nloropropane	SW 8260C	< 2 ug/L			6/17/2019	2	LauraB
1,2-Dibromoethan	ne	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorobenze	ene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroethan	ie	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropropa	ane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorober	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethylbe	nzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorobenze	ene	SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropropa	ane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorobenze		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropropa		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-Methy	l Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	(= : = -)	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
	nyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
•	nyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Propai		SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	- ()	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltoluene	е	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pentar		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
Bromochlorometh	nane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromodichlorome		SW 8260C	< 0.6 ug/L	3		6/17/2019	0.6	LauraB
Bromoform	and to	SW 8260C	< 0.0 ug/L < 1 ug/L	4		6/17/2019	1	LauraB
Diomolomi		344 02000	√ i ug/∟	-			Page 1 of	

Page 1 of 3



Sample Client Sample Id		dentity			Start Date/T	ime Sampled:	Ma	atrix
19060219-009	NOB_070				6/11/20	19 9:25:00 AM	Grou	ndwater
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys
Bromomethane		SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfid	e	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrach	loride	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-Dichloro	oethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethar	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobuta	idiene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenze	ne	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 Chlo	ride	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	9	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
N-Propylbenzer	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethe	ene	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofurar	١	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-Dichl	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichl	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene	•	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluoron	nethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Vinyl Chloride		SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB



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.

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:

🔅 eurofins

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

LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry SDG: SW-12 - Londonderry, NH

Qualifiers

RPD

TEF

TEQ

LCMS Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
В	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.
a	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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry SDG: SW-12 - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry 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	В	2.0	0.34	ng/L		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	В	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry SDG: SW-12 - Londonderry, NH

Client Sample ID: NOB_071

Lab Sample ID: 320-51329-14 Date Collected: 06/12/19 10:00

Matrix: Water Date Received: 06/14/19 09:15

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.3	В	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	В	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	-		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-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		2.0		ng/L			06/18/19 08:20	1
6:2 FTS	ND		9.9		ng/L		06/17/19 06:39	06/18/19 08:20	1
8:2 FTS	ND		2.0	0.37	-			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
1802 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					06/18/19 08:20	1
0.2 1 1 0									

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry SDG: SW-12 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

_			Perc	ent Isotope	nt 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)	
320-51329-14	NOB_071	62	91	89	97	92	90	103	96	
	Percent Isotope Dilution Recovery (Accepta					ceptance L	Limits)			
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	
320-51329-14	NOB_071	90	55	86	25 *	87	84	95	106	
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)		
		M282FTS								
Lab Sample ID	Client Sample ID	(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 = 1802 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

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry 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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-14 Project/Site: DWGTF_Londonderry SDG: SW-12 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

uthority	Program		EPA Region	Identification Number	Expiration Date	
NAB	DoD			L2468	01-20-21	
The following analytes the agency does not do	•	rt, but the laboratory	is not certified by the	e governing authority. This	list may include analytes for whic	
Analysis Method	Prep Method	Matrix	Analyt	е		
EPA 537(Mod)	3535	Water	6:2 FT	S		
EPA 537(Mod)	3535	Water	8:2 FT	S		
EPA 537(Mod)	3535	Water		nylperfluorooctanesulfonam IMeFOSAA)	nidoacetic	
EPA 537(Mod)	3535	Water	`	probutanesulfonic acid (PFE	3S)	
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	Perfluc	oroheptanesulfonic Acid (Pf	FHpS)	
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFHpA)		
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid (PF	HxS)	
EPA 537(Mod)	3535	Water	Perfluc	orohexanoic acid (PFHxA)		
EPA 537(Mod)	3535	Water	Perfluc	oro-n-hexadecanoic acid (P	FHxDA)	
EPA 537(Mod)	3535	Water	Perfluc	prononanoic acid (PFNA)		
EPA 537(Mod)	3535	Water	Perfluc	prooctanesulfonic acid (PFC	OS)	
EPA 537(Mod)	3535	Water	Perfluc	prooctanoic acid (PFOA)		
EPA 537(Mod)	3535	Water	Perfluc	propentanoic acid (PFPeA)		
EPA 537(Mod)	3535	Water	Perfluc	protetradecanoic acid (PFT)	eA)	
EPA 537(Mod)	3535	Water	Perfluc	protridecanoic acid (PFTriA)	
EPA 537(Mod)	3535	Water	Perfluc	oroundecanoic acid (PFUnA	A)	

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

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880 Riverside Parkway
West Sacramento, CA 95605

Chain of Custody Record

<u>TestAmerica</u>

thone (916) 737-5600 Fax (916) 372-1059				THE
	Sampler: /	Lab PM:	Carrier Tracking No(s):	0001
	13/2/	Jahrene Odette C	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(A. 345)

Client Information Client Contact: Derek Bennett orlette johnson@testamericainc.com 449-2007 **Analysis Requested** New Hampshire Dept of Environ Services Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH N - None IDA - (MOD) PFAS, Standard List (A Analytes) Concord C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P-Na2O4S E - NaHSO4 Q - Na2SO3 NH, 03302 F-MeOH R - Na2S2O3 Phone: G - Amchior 5-H2SO4 Purchase Order not required (603) 271-8520 T - TSP Dodecahydrate H - Ascarbic Acid - Ice U - Acetone Email MS/MSD (Yes or No) J - DI Water V - MCAA Pay using 3904 derek.bennett@des.nh.gov W - pH 4-5 K-EDTA Project #: Z - other (specify) L-EDA TrustFund Londondorry DWGTF- LUNDONDERRY Other: SSOW#: Londonderry, NH 6 Total Number Matrix Sample (Waiwater, Type Sample (C=comp. PFC Sample Date G=grab) ST=Tissue, A=Air) Sample Identification Time Special Instructions/Note: Preservation Code: NOB_058 1200 6 Diw 114 LITEMFIELD RD 6 NOB 159 1725 DW 6 NOB_060 19 JUSTIN CIRCLE DW 16 OTTERSON RD NOIS-061 6 1110 Sample Disposal (A fee may be assesse Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Date lethod of Shipment NOBI DE Custody Seals Intact: Custody Seal No .: Cooler Temperature(s) °C and Other Remarks 915 50 6/14/19 A Yes A No

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1. 00/04/20

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 G - Amchior 5 - H2SO4 (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z - other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

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6/27/2019

Page

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Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-14 SDG Number: SW-12 - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

Login Number: 51329 List Number: 1

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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:



NELSON ANALYTICAL LAB

RP190627025

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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061387.02

Londonderry WQ Eval., Londonderry, NH, #95160.00 **NOB 071**

sampled Date: 12-Jun-2019 10:00

Metals by ICP/MS

<u>Analyte</u>	Result	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.13	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

Date Rec'd: 1019 1040 6. AQUARIAN ANALYTICALIABL - 138 2 153 West Road Rec'd by Canterbury, NH 03224 Phone: (603)783-9097 RP190627025 E-mail: frontdesk@aquarianlabs.com A Division of Nelson Analytical, LLC Turnaround Requirements (check one) **Project Information** Rush Samples Need Prior Approval Project Manager: Mark Henderson
Report To: Mark Henderson
Invoice To: Accounts Payable
Phone: 603-224-4122
E-mail: MHenderson@ nobis-group.com Project #: 95/60.00 Please inquire about Same Day Turnaround Project Name: London Rerry W. Eval.
Town/Site: London Serry, NH rush service. If we are One Day Turnaround able to meet your rush needs with reasonable Two Day Turnaround Sampler: R. Rizz effort, we will not charge Three Day Turnaround Company: Nobis Group a rush fee. Please call ahead. Normal Turnaround Bid Reference: Sample Information **VOCs SVOCs** Petroleum Metals Wet Chemistry / Inorganics of Containers Collection Sample ID Date/Time Aduarian ID NOB- 070 Date/Time: 1040 Receipt Conditions (laboratory use only): PROJECT REQUIREMENTS (Please complete): ISO 17025 accreditation required? ____Yes___No Date/Time: Relinguished by: Received by: EDD required? _____Yes____No Laboratory Supplied Containers? Yes No. MCP Compliance required?____Yes___ Containers Intact/Properly Labeled Yes No. Relinquished by: Date/Time: Is this NH "Odd Fund" related?____Yes___No Received by: Were samples delivered on ica?: Yes No Does a price quote apply?____Yes____No Receipt Temperature: FRM-AO-SAMPI FSHRMISSIONFORM-030016



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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"



Analytical Results

Lab ID:

Date:

19060219

6/25/2019

NHDES MtBE Remediation Bureau

Control #: 19060219

29 Hazen Drive, PO Box 95

Derek S. Bennett

Project Number: DWGTF Londonderry

Concord

NH 03302-0

Project Name: MTBE_01

Project Location:

Sample	Client Sample Identity	у			Start Date/T	ime Sampled:	Ma	atrix
19060219-010	NOB_071				6/11/20	19 10:00:00 AM	Grou	ndwater
						Date/Time		
Parameter		Method	Result	MCL	Qualifier	Analyzed	RDL	Analyst
1,1,1,2-Tetrach	loroethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1,1-Trichloroe	ethane	SW 8260C	< 1 ug/L	200		6/17/2019	1	LauraB
1,1,2,2-Tetrach	loroethane	SW 8260C	< 0.5 ug/L	2		6/17/2019	0.5	LauraB
1,1,2-Trichloroe	ethane	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,1-Dichloroeth	ane	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,1-Dichloroeth	ene	SW 8260C	< 1 ug/L	7		6/17/2019	1	LauraB
1,1-Dichloropro	pene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorob	penzene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,3-Trichlorop	propane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,2,4-Trichlorob	penzene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
1,2,4-Trimethyll	benzene	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-Dibromoeth	nane	SW 8260C	< 1 ug/L	0.02		6/17/2019	1	LauraB
1,2-Dichlorober	nzene	SW 8260C	< 1 ug/L	600		6/17/2019	1	LauraB
1,2-Dichloroeth		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,2-Dichloropro		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
1,3,5-Trichlorob	•	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3,5-Trimethyll		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,3-Dichlorober		SW 8260C	< 1 ug/L	40		6/17/2019	1	LauraB
1,3-Dichloropro		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
1,4-Dichlorober	•	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
2,2-Dichloropro		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Butanone	P 5.110	SW 8260C	< 12 ug/L	4000		6/17/2019	12	LauraB
2-Chlorotoluene	ع	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
	hyl Propane (ETBE)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
2-Hexanone	inyi i ropano (2152)	SW 8260C	< 12 ug/L			6/17/2019	12	LauraB
	ethyl Butane (TAME)	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
•	ethyl Propane (MTBE)	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
2-Methyl-2-Prop		SW 8260C	< 20 ug/L			6/17/2019	20	LauraB
4-Chlorotoluene	, ,	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Isopropyltolue		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
4-Methyl-2-Pen		SW 8260C	< 12 ug/L	350		6/17/2019	12	LauraB
	lanone	SW 8260C	< 12 ug/L	6300		6/17/2019	12	LauraB
Acetone Acrolein		SW 8260C	< 5 ug/L	0000		6/17/2019	5	LauraB
		SW 8260C				6/17/2019	5	
Acrylonitrile		SW 8260C	< 5 ug/L	5		6/17/2019		LauraB
Benzene			< 1 ug/L	3		6/17/2019	1	LauraB
Bromobenzene		SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Bromochlorome		SW 8260C	< 1 ug/L	3		6/17/2019	1	LauraB
Bromodichloror	nenane	SW 8260C	< 0.6 ug/L	4		6/17/2019	0.6	LauraB
Bromoform		SW 8260C	< 1 ug/L	4			1 Page 1 of	LauraB

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Sample	Client Sample Id	lentity			Start Date/T	ime Sampled:	Ма	Matrix	
19060219-010	NOB_071			<u>.</u>	6/11/20	19 10:00:00 AM	Grou	ndwater	
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analys	
Bromomethane		SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB	
Carbon Disulfide	Э	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
Carbon Tetrach	loride	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-Dichloro	ethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB	
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB	
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB	
Dibromomethan	ie	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
Dichlorodifluoro	methane	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 Eth	er	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB	
Hexachlorobuta	diene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB	
Isopropylbenzer	ne	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 Chlo	ride	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-Propylbenzen	ie	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB	
Sec-Butylbenze	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB	
Tert-Butylbenze	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
Tetrachloroethe	ne	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB	
Tetrahydrofuran	1	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-Dichlo	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB	
Trans-1,3-Dichlo	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB	
Trichloroethene		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB	
Trichlorofluorom	nethane	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB	
Vinyl Chloride		SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB	



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.

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:

🔅 eurofins

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

LINKS

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Total Access

Have a Question?



Visit us at: www.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.

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Definitions/Glossary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry SDG: SW-13 - Londonderry, NH

Qualifiers

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

RPD

TEF

TEQ

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)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

6/27/2019

Case Narrative

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry SDG: SW-13 - Londonderry, NH

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 1.0° C and 2.4° 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

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry 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	В	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	JB	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

Client Sample Results

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry SDG: SW-13 - Londonderry, NH

Client Sample ID: NOB_067 Lab Sample ID: 320-51329-10

Date Collected: 06/11/19 14:45 **Matrix: Water** Date Received: 06/14/19 09:15

Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Perfluorobutanoic acid (PFBA)	3.2 B	2.0		ng/L		06/17/19 06:39	06/18/19 07:48	•
Perfluoropentanoic acid (PFPeA)	3.5	2.0		ng/L		06/17/19 06:39		•
Perfluorohexanoic acid (PFHxA)	3.7	2.0	0.57	ng/L		06/17/19 06:39	06/18/19 07:48	
Perfluoroheptanoic acid (PFHpA)	2.8	2.0	0.25	ng/L		06/17/19 06:39	06/18/19 07:48	•
Perfluorooctanoic acid (PFOA)	11	2.0	0.84	ng/L		06/17/19 06:39	06/18/19 07:48	•
Perfluorononanoic acid (PFNA)	0.87 J	2.0	0.27	ng/L		06/17/19 06:39	06/18/19 07:48	
Perfluorodecanoic acid (PFDA)	0.35 J	2.0	0.30	ng/L		06/17/19 06:39	06/18/19 07:48	
Perfluoroundecanoic acid (PFUnA)	ND	2.0	1.1	ng/L		06/17/19 06:39	06/18/19 07:48	•
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.54	ng/L		06/17/19 06:39	06/18/19 07:48	•
Perfluorotridecanoic acid (PFTriA)	ND	2.0	1.3	ng/L		06/17/19 06:39	06/18/19 07:48	
Perfluorotetradecanoic acid (PFTeA)	ND	2.0	0.29	ng/L		06/17/19 06:39	06/18/19 07:48	
Perfluorobutanesulfonic acid (PFBS)	2.3	2.0	0.20	ng/L		06/17/19 06:39	06/18/19 07:48	•
Perfluorohexanesulfonic acid (PFHxS)	1.8 JB	2.0	0.17	ng/L		06/17/19 06:39	06/18/19 07:48	
Perfluoroheptanesulfonic Acid (PFHpS)	ND	2.0	0.19	-		06/17/19 06:39	06/18/19 07:48	•
Perfluorooctanesulfonic acid (PFOS)	3.8	2.0	0.53	-		06/17/19 06:39	06/18/19 07:48	
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.31	-		06/17/19 06:39	06/18/19 07:48	•
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND	2.0		ng/L			06/18/19 07:48	•
6:2 FTS	ND	9.8		ng/L		06/17/19 06:39	06/18/19 07:48	
8:2 FTS	ND	2.0		ng/L			06/18/19 07:48	•
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND	2.0	0.88	ng/L		06/17/19 06:39	06/18/19 07:48	•
Isotope Dilution	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fa
13C4 PFBA	63	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C5 PFPeA	87	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C2 PFHxA	85	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C4 PFHpA	96	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C4 PFOA	90	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C5 PFNA	95	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C2 PFDA	97	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C2 PFUnA	87	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C2 PFDoA	83	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C2 PFTeDA	55	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C3 PFBS	84	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C2 PFHxDA	23 *	50 - 150				06/17/19 06:39	06/18/19 07:48	
1802 PFHxS	82	50 - 150				06/17/19 06:39	06/18/19 07:48	
13C4 PFOS	83	50 - 150				06/17/19 06:39	06/18/19 07:48	
d3-NMeFOSAA	98	50 - 150					06/18/19 07:48	
M2-6:2 FTS	99	50 - 150					06/18/19 07:48	
M2-8:2 FTS	93	50 - 150					06/18/19 07:48	

6/27/2019

Isotope Dilution Summary

Client: New Hampshire Dept of Environmental Serv

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry SDG: SW-13 - Londonderry, NH

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

Matrix: Water Prep Type: Total/NA

			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		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)
320-51329-10	NOB_067	63	87	85	96	90	95	97	87
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFDoA	PFTDA	3C3-PFB	PFHxDA	PFHxS	PFOS	-NMeFOS	M262FTS
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)
320-51329-10	NOB_067	83	55	84	23 *	82	83	98	99
			Perc	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M282FTS							
Lab Sample ID	Client Sample ID	(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 = 1802 PFHxS

PFOS = 13C4 PFOS

d3-NMeFOSAA = d3-NMeFOSAA

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

6/27/2019

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

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry SDG: SW-13 - Londonderry, NH

Client Sample ID: NOB_067

Date Received: 06/14/19 09:15

Lab Sample ID: 320-51329-10 Date Collected: 06/11/19 14:45 **Matrix: Water**

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 320-51329-10 Project/Site: DWGTF_Londonderry SDG: SW-13 - Londonderry, NH

Laboratory: Eurofins TestAmerica, Sacramento

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

ithority IAB	Program DoD		EPA Region	Identification Numb	Expiration Date 01-20-21
The following analytes the agency does not o	•	rt, but the laboratory	is not certified by the	e governing authority. ⁻	This list may include analytes for whic
Analysis Method	Prep Method	Matrix	Analyt	e	
EPA 537(Mod)	3535	Water	6:2 FT	S	
EPA 537(Mod)	3535	Water	8:2 FT	S	
EPA 537(Mod)	3535	Water		hylperfluorooctanesulfo NMeFOSAA)	namidoacetic
EPA 537(Mod)	3535	Water	Perflu	orobutanesulfonic acid	(PFBS)
EPA 537(Mod)	3535	Water	Perfluc	orobutanoic acid (PFBA	A)
EPA 537(Mod)	3535	Water	Perfluc	orodecanesulfonic acid	(PFDS)
EPA 537(Mod)	3535	Water	Perfluc	orodecanoic acid (PFDA	A)
EPA 537(Mod)	3535	Water	Perfluc	orododecanoic acid (PF	FDoA)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanesulfonic Acid	d (PFHpS)
EPA 537(Mod)	3535	Water	Perfluc	oroheptanoic acid (PFH	lpA)
EPA 537(Mod)	3535	Water	Perfluc	orohexanesulfonic acid	(PFHxS)
EPA 537(Mod)	3535	Water	Perflu	orohexanoic acid (PFH)	κA)
EPA 537(Mod)	3535	Water	Perflu	oro-n-hexadecanoic aci	d (PFHxDA)
EPA 537(Mod)	3535	Water	Perflu	orononanoic acid (PFN/	A)
EPA 537(Mod)	3535	Water	Perflu	orooctanesulfonic acid ((PFOS)
EPA 537(Mod)	3535	Water	Perflu	orooctanoic acid (PFOA	A)
EPA 537(Mod)	3535	Water	Perflu	oropentanoic acid (PFP	reA)
EPA 537(Mod)	3535	Water	Perflu	orotetradecanoic acid (F	PFTeA)
EPA 537(Mod)	3535	Water	Perflu	orotridecanoic acid (PF	TriA)
EPA 537(Mod)	3535	Water		oroundecanoic acid (PF	,

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

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6/27/2019

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	

880 Riverside Parkway West Sacramento, CA 95605 **Chain of Custody Record**

<u>TestAmerica</u>

4E	LEADER I	NENV	RONMENTAL	TESTING

Phone (916) 737-5600 Fax (916) 372-1059													THE LEADER IN ENVIRONMENTAL TESTING
Client Information	DHB/				b PM: ohnson	n, Ori	lette S			Carne	r Tracking No	(s):	COC No.
Client Contact: Derek Bennett	Phone: 65 449-20	107/			Mail: rlette.jo	ohnse	on@testar	imericali	nc.com				Page:
Company New Hampshire Dept of Environ Services								А	nalysis F	Reques	ted		Job #:
Address:	Due Date Request	led:			11		TT						Preservation Codes:
29 Hazen Drive City:	TAT Requested (d.	lavs):			+1				1.7	11			A - HCL M - Hexane B - NaOH N - None
Concord					11		rtes)		X				C - Zn Acetate O - AsNaO2
State, Zip: NH, 03302	Standard TAT						Analy		13	4			D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
Phone: (603) 271-8520	PO.#. Purchase Order	r not require	art				Standard List (A Analytes)		na				F - MeOH R - Na2S2O3 G - Amchior S - H2SO4
Email:	WO#:		10		- No	=	I Lis	1	an	1			H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone
derek.bennett@des.nh.gov Project Name:	Pay using 3904				les o	or No)	anda		2			l sala	
TrustFund_Londondorry DWGTF_ LONDONDORRY						ves c	15, 51		23			contained	L - EDA Z - other (specify)
Site: Londonderry, NH	SSOW#:				Samp	SD (Yes) PFA		18	1		95	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)		Field Filtered	Perform MS/M	PFC IDA - (MOD) PFAS,		9			Total Number	
		> <	Preserva	tion Code:	X	X							
NOB_056	6-3 19	1200	6	Div	N		X						114 LOCHFIELD RD
NOB 259	6-3-19	1225	Ŀ	DW	N		X						7 ROLLING RIDGE RD
NOB_060	6-5-19	945	6	Dui	N		X						19 JUSTIN CIRCLE
NoB-061	6-5-19	1110	6	DW	N		X						16 OTTERSON RD
					1						11	1 1 1	J
					\forall		7						
					++	Ħ		===			- 1444		
					++		++				- 111111111		
Possible Hazard Identification					+	Sam	ple Dispo	osal (A	fee may b	e assess	E	329 Chain of	Custody
	ison B Unkne	own \square_I	Radiological				Return		n 🗅	Dispos	al By Lab	☐ Arci	hive For Months
Deliverable Requested: I, II, III, IV, Other (specify)						Spec	cial Instruc	ctions/Q	C Requirer	ments:			
Empty Kit Relinquished by:		Date:			Tim	ne:		2	1 0		Method of Ship	ment	
Relinquished by:	Date/Time: 6-5-19 /15	530		Company NOBIS	c	P	Received by:	1	UN	OF HAN	rie Dat	te/Time;	15:30 23 Company
Helipprojethed by:	Date/Time		2 -	Company		1	Shi	201	. 1	11	Dat Dat	erime lic	Company Company
Refinithished by:	0/13/19 Date/Time:	143		DP) Company		F	3/1/2 Regeived by		Certe	- 4c	Dat	e/Time:	Company
Custody Seals Intact: Custody Seal No.:	1125					16	DZU	u		5		114119	10.2 12000
A Yes A No						-	ooier remp	perature(s)	°C and bife	1 O	6,7.0	_	915 50 6/14/19

Page 13 of 15











Ver: 08/04/2016

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Chain of Custody Record



Phone (916) 737-5600 Fax (916) 372-1059 Carrier Tracking No(s): COC No. R. RizzA Client Information Johnson, Orlette S 603-499-2007 Client Contact: age. orlette.johnson@testamericainc.com Derek Bennett New Hampshire Dept of Environ Services **Analysis Requested** Due Date Requested: Preservation Codes: 29 Hazen Drive A-HCL M - Hexane TAT Requested (days): B - NaOH Concord Standard List (20 Analyles) C - Zn Acetate O - AsNaO2 State, Zip: Standard TAT D - Nitric Acid P - Na2O4S NH, 03302 E - NaHSO4 Q - Na2SQ3 F-MeOH R - Na2S2O3 G - Amchior 5 - H2SO4 (603) 271-8520 Purchase Order not required H - Ascorbic Acid T - TSP Dodecahydrate WO# U - Acetone Da MS/MSD (Yes or No) derek.bennell@des.nh.gov Pay using 3904 J - DI Water V - MCAA containers K-EDTA W - pH 4-5 Project Name: roject #: L-EDA Z - other (specify) DWGTF_Londonderry SSOW# Londonderry, NH 6 Total Number Matrix Sample (Wavenier. Perform Type Sestlid Sample (C=comp, Sample Identification Sample Date Time G=grab) BT=T:saue A:Air) Special Instructions/Note: Preservation Code G 5 Allison Lu 0930 X X 1055 DW 1325 NOB-065 500 6 X 500 50 SW SW 1550 6 500 6 6-12-19 500 1000 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Disposal By Lab Return To Client Archive For Months Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: Empty Kit Relinquished by: Aethod of Shipment Not315 Received by: Pater Mery Norsis Fulde NHD25CdD Shen NADES NHDES 4:30 Shippin cool-Cooler Temperature(s) "C and Other Remarks: Custody Seal No.: Custody Seals Intact: A Yes A No Ver: 08/04/2016

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6/27/2019

Page

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Client: New Hampshire Dept of Environmental Serv

Job Number: 320-51329-10 SDG Number: SW-13 - Londonderry, NH

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Login Number: 51329

Creator: Oropeza, Salvador

Creator: Oropeza, Salvador		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	



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

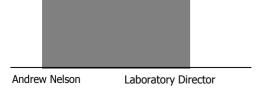
18 Chenell Drive Concord NH, 03301:

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:



NELSON ANALYTICAL LAB



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

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

Date Reported :

27-Jun-19 12:35

REPORT OF ANALYSIS 119061344.06

Londonderry WQ Eval., Londonderry, NH, #95160.00 **NOB 67**

sampled Date: 11-Jun-2019 02:45

Metals by ICP/MS

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
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

<u>Analyte</u>	<u>Result</u>	<u>Reporting</u> <u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Phosphate-PO4	0.17	0.05	mg/L	06/17/2019 11:50	HACH 8190	NH

Date Rec'd Time Rec'd Location: Rec'd by: C Location: Cooler: N Ice VAN Cooler: Pos Neg NA There are the Market Transports	46 Temp Rec'd:	A C	QU.					i i							11/2	9	り	<i>\</i>	E -m	nail:	fro	S tde	Can Pho sk@	iter ne:	53 Jury (60) uari	West Roa , NH 0322 3)783-909 anlabs.cor	đ 4 7 n
Cooler: N lee NA Chlarine: Pos Neg NA Turktaround Requirements	CO_OTHER_	-	1	A Di	visi	on of	Ne	lso:	n A	nal	yti						<u> </u>	l	_		5	<u> </u>				· · · · · · · · · · · · · · · · · · ·	7
Tamareana requirements						· · · · · · · · · · · · · · · · · · ·		į,			<u> </u>		^o roj	ect l	nforn	natio	n				4	_					
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	es Need Prior Apme Day Turnarou ne Day Turnarou wo Day Turnarou ee Day Turnarou Normal Turnarou	ind ind ind		Proje pject Na Town/ Sam Comp Refere		9516 Loved R. No	D. Conde Rom Bis	00 Rev 22 6	e Gr vou	IR L	EV V	ral Y	•	- - -	Pro		Mana epor voice Ph E-	To one	4	03 ·	ent S	#4 3 14-	Pa 41	<u>400</u> 480	sn gk 3	i's -Group	ن مت
Sample Informa	tion		· V	OCs		svo	Cs			Pet	rolet	ım :			Vletal	S	Ń	et C	hen	nistr	y / Ir	norga	anics	S	-		j
NOB - 066 NOB - 067 NOB - 067	Collection Date/Time 6-11-13/083 6-11-13/1055 6-11-13/1335 6-11-13/1335 6-11-13/1335 6-11-13/1335	060 / 060 / 560 L 560 L 560 L	VOCs EPA 6260B/6260C Sclect Parameter only:	VOCS EPA 524.2 Drinking Water Select Parameter only. 14-dioxane / EDB 82605 SIM low level	SVOCs EPA 8270C/8270D Full list / PAH only	PCB Aradors EPA 80824 / 808 Pestididas Festididas	Herbicides EPA 8151A	Drinking Water SOCs (circle)	TPH Fuel OII 8100M Diesel Range Organics	TPH Gasoline 8015B Gasoline Range Organics	МАЪЕР ЕРН	МАОЕР VPH		XXXXXX XXX (Signatural circle)	Total / Dissolved Sodium / Calcium / Magnesium	total / Dissolved Additional Metals (Total / Dissolved):	X X EPA 300.0; Chloride / Sulfate Stomide / Wilfrage Wilfrage Floride	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 (TDS)	TCLP (please also check off the required analyses)	XXXX Total Masphans	uarian ID 2 3 4 5 4 8	Page 10 of 10
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Relinquished by:	Date/Time: Date/Time: Date/Time:	646	Receiv Receiv Receiv	red by:){				Laborai Contain Were sa	lory Su	pplied (act/Pro deliver	Contain perly La r ed on i	ers?(abeled ce2(Y	Yes / N	/ No	only):	EDD r MCP (Is this	7025 a equire Compli NH "O	d?iance re	ation re Yes_ equired* id" relat	equired N ? ted?	?	Yes_ No	Nc	-		



317 Elm Street Milford, NH 03055

Lab ID: 19060219

Date Received: 6/13/2019

(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

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





317 Elm Street Milford, NH 03055 (603) 673-5440

Sales@chemservelab.com

6/24/2019

NHDES MtBE Remediation Bureau

Derek S. Bennett

Control #:

19060219

Lab ID: 19060219

Date:

29 Hazen Drive, PO Box 95

Project Number:

DWGTF Londonderry

Concord

NH 03302-0 Project Name: MTBE_01

Project Location: Londonderry, NH

19060219 Lab ID:

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

Control #: 19060219 Lab ID: 19060219

29 Hazen Drive, PO Box 95

Project Number: **DWGTF Londonderry** MTBE 01

Concord NH

Bromoform

Derek S. Bennett

Project Name: 03302-0

Date: 6/25/2019

Analytical Results

Project Location:

Sample Client Sample Identity Start Date/Time Sampled: Matrix 19060219-006 **NOB 067** 6/11/2019 2:45:00 PM Groundwater Date/Time MCL Qualifier **Parameter** Method RDL Result Analyzed **Analyst** 5 6/17/2019 SW 8260C 1.1.1.2-Tetrachloroethane < 1 ug/L 1 LauraB 200 6/17/2019 1.1.1-Trichloroethane SW 8260C < 1 ug/L 1 LauraB 2 6/17/2019 0.5 1,1,2,2-Tetrachloroethane SW 8260C < 0.5 ug/L LauraB 5 6/17/2019 1.1.2-Trichloroethane SW 8260C < 1 ug/L 1 LauraB 70 6/17/2019 1,1-Dichloroethane SW 8260C < 1 ug/L 1 LauraB 1,1-Dichloroethene SW 8260C < 1 ug/L 7 6/17/2019 1 LauraB 6/17/2019 1,1-Dichloropropene SW 8260C < 1 ug/L 1 LauraB 1,2,3-Trichlorobenzene SW 8260C < 1 ug/L 6/17/2019 1 LauraB 6/17/2019 1,2,3-Trichloropropane SW 8260C < 1 ug/L 1 LauraB 70 6/17/2019 1 1,2,4-Trichlorobenzene SW 8260C < 1 ug/L LauraB 6/17/2019 1 1,2,4-Trimethylbenzene SW 8260C < 1 ug/L LauraB 6/17/2019 2 1,2-Dibromo-3-Chloropropane SW 8260C < 2 ug/L LauraB 0.02 6/17/2019 1,2-Dibromoethane SW 8260C < 1 ug/L1 LauraB 600 6/17/2019 1,2-Dichlorobenzene SW 8260C < 1 ug/L 1 LauraB 5 6/17/2019 1,2-Dichloroethane SW 8260C < 1 ug/L 1 LauraB 5 6/17/2019 1,2-Dichloropropane SW 8260C < 1 ug/L 1 LauraB 6/17/2019 SW 8260C 1 LauraB 1,3,5-Trichlorobenzene < 1 ug/L 6/17/2019 1,3,5-Trimethylbenzene SW 8260C < 1 ug/L 1 LauraB 40 6/17/2019 1,3-Dichlorobenzene SW 8260C < 1 ug/L 1 LauraB 6/17/2019 SW 8260C < 1 ug/L 1 LauraB 1,3-Dichloropropane 5 6/17/2019 SW 8260C 1 1,4-Dichlorobenzene < 1 ug/L LauraB 6/17/2019 SW 8260C 1 2,2-Dichloropropane < 1 ug/L LauraB 6/17/2019 4000 LauraB 2-Butanone SW 8260C < 12 ug/L 12 6/17/2019 2-Chlorotoluene SW 8260C < 1 ug/L1 LauraB 6/17/2019 2-Ethoxy-2-Methyl Propane (ETBE) 1 SW 8260C < 1 ug/L LauraB 6/17/2019 2-Hexanone SW 8260C < 12 ug/L 12 LauraB 6/17/2019 2-Methoxy-2-Methyl Butane (TAME) SW 8260C < 1 ug/L 1 LauraB 2-Methoxy-2-Methyl Propane (MTBE) 70 6/17/2019 LauraB SW 8260C < 1 ug/L 1 6/17/2019 2-Methyl-2-Propanol (TBA) SW 8260C < 20 ug/L 20 LauraB 4-Chlorotoluene SW 8260C < 1 ug/L 6/17/2019 1 LauraB 6/17/2019 LauraB 4-Isopropyltoluene SW 8260C < 1 ug/L 1 350 6/17/2019 4-Methyl-2-Pentanone SW 8260C < 12 ug/L 12 LauraB 6300 6/17/2019 Acetone SW 8260C < 12 ug/L 12 LauraB 6/17/2019 Acrolein 5 LauraB SW 8260C < 5 ug/L Acrylonitrile SW 8260C < 5 ug/L 6/17/2019 5 LauraB 5 6/17/2019 LauraB Benzene SW 8260C < 1 ug/L 1 Bromobenzene SW 8260C 6/17/2019 1 LauraB < 1 ug/L 6/17/2019 Bromochloromethane SW 8260C LauraB < 1 ug/L 1 6/17/2019 Bromodichloromethane SW 8260C 3 0.6 LauraB < 0.6 ug/L

Page 1 of 3

LauraB

6/17/2019

< 1 ug/L

SW 8260C



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

Sample	Client Sample Identity			Start Date/T	ime Sampled:	Ма	atrix	
19060219-006	60219-006 NOB_067			6/11/20	19 2:45:00 PM	Grou	ndwater	
Parameter		Method	Result	MCL	Qualifier	Date/Time Analyzed	RDL	Analyst
Bromomethane		SW 8260C	< 1 ug/L	10		6/17/2019	1	LauraB
Carbon Disulfide	е	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Carbon Tetrach	loride	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-Dichloro	ethene	SW 8260C	< 1 ug/L	70		6/17/2019	1	LauraB
Cis-1,3-Dichloro	propene	SW 8260C	< 0.4 ug/L	0.4		6/17/2019	0.4	LauraB
Dibromochloron	nethane	SW 8260C	< 1 ug/L	2		6/17/2019	1	LauraB
Dibromomethan	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Dichlorodifluoro	methane	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 Eth	ner	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Ethylbenzene		SW 8260C	< 1 ug/L	700		6/17/2019	1	LauraB
Hexachlorobuta	diene	SW 8260C	< 0.5 ug/L	0.6		6/17/2019	0.5	LauraB
Isopropylbenzer	ne	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 Chlo	ride	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-Propylbenzer	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
O-Xylene		SW 8260C	< 1 ug/L	10000		6/17/2019	1	LauraB
Sec-Butylbenze	ne	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Styrene		SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Tert-Butylbenze	ene	SW 8260C	< 1 ug/L			6/17/2019	1	LauraB
Tetrachloroethe	ne	SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Tetrahydrofuran	1	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-Dichle	oroethene	SW 8260C	< 1 ug/L	100		6/17/2019	1	LauraB
Trans-1,3-Dichle	oropropene	SW 8260C	< 0.4 ug/L			6/17/2019	0.4	LauraB
Trichloroethene		SW 8260C	< 1 ug/L	5		6/17/2019	1	LauraB
Trichlorofluorom	nethane	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.